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Health and Safety
Commission

Conveyance of Explosives by Road Regulations 198–

Consultative Document

This Consultative Document is issued by the Health and Safety Commission in compliance with its duty under Section 50(3) and 16(2) of the Health and Safety at Work etc Act 1974 to consult bodies which appear to it to be appropriate before submitting proposals for the making of Regulations.

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INTRODUCTION

1 This document sets out the proposals of the Health and Safety Commission for regulations controlling the conveyance of explosives by road. These regulations are to supersede the corresponding provisions in the Explosives Act 1875 and related legislation.

BACKGROUND

2 The controls imposed by the Explosives Act 1875 are both comprehensive and specific. They deal with the manufacture, classification, packaging, labelling, importation, acquisition, sale, storage and conveyance by various modes of transport of explosives. As a result of the explicit nature of these provisions it has not always been possible to take advantage of technological developments or new situations as they have developed in the last 50 years, nor to take account of international prescriptions, standards or regulations without the direct intervention of HSE (HM Explosives Inspectorate). In order to accommodate such events the Inspectorate has had to rely upon Special Packing Authorities and Exemption Certificates. The resultant proliferation of such documents has made a complex body of law even more difficult to comprehend.

3 The Health and Safety Commission's Plan of Work to update the Explosives Act 1875 and the mass of subordinate legislation envisages the preparation of separate but co-ordinated regulations dealing with the various topics. Each set of regulations will supplant particular sections of the 1875 Act or parts of the subordinate legislation which will be repealed or revoked as appropriate.

4 The first stage of this project involved the provision of a framework for the subsequent regulations. This has been provided by the Commission in the form of the Classification and Labelling of Explosives Regulations 1983 which define afresh such basic terms as "explosive substance" and "explosive article" on the basis of the recommendations of the United Nations Committee of Experts on the Transport of Dangerous Goods*. These Regulations, which came into effect on 1 November 1983, require with certain exceptions that any explosive product which is to be conveyed, kept or supplied has to be classified by the Health and Safety Executive, or in the case of military explosives by the Ministry of Defence, and meet prescribed labelling requirements. The provisions introduce a single, comprehensive system of classification and labelling for both commercial and military explosives based upon the UN system.

5 Under the UN system of classification, explosive products are classified as Class 1 which is sub-divided into 5 Divisions based upon the physical hazards presented by a product in the event of ignition or initiation during supply, keeping or conveyance. Division 1.1 corresponds to the hazard which is potentially the most severe. Although the system is intended for transport only, the experience of several countries has been that it is readily adapted to the needs of manufacture and storage thereby providing a universal classification. The ultimate aim is therefore the adoption of the UN system in all contexts. In this instance the UN system provides the technical framework for the present proposals on the conveyance of explosives by road.

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* The "Orange Book", ST/SG/AC.10/1/Rev 3

THE LAW AT PRESENT

6 The carriage of explosives by road is at present governed mainly by Order of Secretary of State No 11 dated September 20 1924 ("Byelaws as to the conveyance of explosives on roads, and in certain special cases") made under the Explosives Act 1875. Under the provisions of this order the Secretary of State may specify conditions for the conveyance of explosives by mechanically propelled vehicles. These conditions were last revised in 1948.

7 The conveyance of military explosives (ie explosives held for the purposes of the Ministry of Defence but not actually under the direct control of the Ministry of Defence) is governed by a separate instrument, The Conveyance by Road of Military Explosives Regulations 1977. Conveyance of explosives which are under direct control of the Ministry of Defence or other department of Government is exempt from statutory control.

WHY NEW LEGISLATION IS NEEDED

8 Although the safety record under the present legislation has been very good, there are strong reasons why new legislation should be introduced.

9 Since the present conditions for conveyance by road were drawn up, there have been considerable changes in operating methods and road vehicle design, eg the widespread use of intermodal freight containers and the introduction of fuels other than petrol and diesel oil. Some changes in the existing legislative controls are therefore necessary to remove barriers to economic trade in explosives created through use of outdated and inefficient methods. The existing legislation has become fragmented and difficult to comprehend, because of a series of piecemeal amendments to the original 1875 Explosives Act. Rationalisation of such legislation is one of the aims of the HSW Act 1974.

10 The adoption by the United Kingdom of the United Nations system of classification, as embodied in the Classification and Labelling of Explosives Regulations, provides a basis for a review of the types and quantities of explosives which may be conveyed together on one vehicle. There is also the opportunity for harmonisation with international controls, thus benefiting overseas trade.

WHAT THE PROPOSALS TRY TO ACHIEVE

11 The proposals aim to replace the present complex legislation with a single Statutory Instrument governing all aspects of conveyance of explosives by road. As far as possible the regulations set out objectives rather than detailed requirements. This is in order to allow flexibility in means of attaining the objectives, which may well be achieved in different (but equally effective) methods. The regulations are intended to remain in operation for decades to come so the aim has been that they should also be sufficiently flexible to cater for imminent technological innovation.

12 With regard to safety considerations, the object has been to make provision for the present high standards of safety to be maintained using alternative means made possible by recent innovations in classification and transport methods.

13 The opportunity has been taken to make significant improvements in security requirements, in view of the criminal use of explosives in recent years, so that what is generally the current best practice will become mandatory for certain designated types of explosives.

SCOPE OF PROPOSALS - TYPES OF SUBSTANCES AND ARTICLES CONTROLLED

14 The proposals govern conveyance of substances and articles in United Nations Class 1; explosive substances or articles being conveyed in order to be tested for possible inclusion in Class 1; and explosives which, on classification, are excluded from United Nations Class 1 because they are too dangerous for transport in the form and packaging specified in the application for classification. Explosive nuclear devices and their components are excluded from the Classification and Labelling of Explosives Regulations 1983 and are therefore automatically excluded from the present proposals. Conveyance of other substances and articles with explosive properties which are assigned to United Nations Class 4 or 5 will be governed by the proposed Dangerous Substances (Conveyance by Road in Packages etc.) Regulations*.

RELATIONSHIP TO INTERNATIONAL CONTROLS

Recommendations of the United Nations Committee of Experts on the Transport of Dangerous Goods

15 The requirements of the regulations are based on, and therefore compatible with, the recommendations of the United Nations Committee of Experts on the Transport of Dangerous Goods.

The European Agreement on the International Carriage of Dangerous Goods by Road (ADR)

16 The United Kingdom is not at present bound by the above agreement so far as explosives are concerned. However, work is gradually proceeding to revise the ADR agreement so as to use United Nations classifications, terminology and principles. Although the revised ADR is unlikely to become effective for some years, it is hoped that when it does come into force its provisions will be broadly similar to those in the present UK national proposals. The United Kingdom may then withdraw its reservation in Marginal 11 610 of ADR. Provision has therefore been made in the draft regulations to exempt vehicles operating under the ADR agreement from the constructional requirements of the regulations.

Convention concerning International Carriage by Rail (CIM)

17 Annex 1 (RID) to the above convention is concerned with carriage of dangerous goods by rail. RID is being revised on the same lines as the ADR agreement described above. At present, under a Protocol of 1970, dangerous goods sent from the Continent must comply with RID and with United Kingdom conditions for carriage by rail and sea. This position is likely to change in the future after the COTIF agreement enters into force on 1 May 1985 to supplant CIM. In practice there is very little train/ship traffic in goods of Class 1 because the bye-laws of those ports most concerned limit Class 1 traffic to very small amounts. This is recognised in the List of International Frontiers (LIF) and HM Customs procedures. The only area in

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* Consultative Document published 1984.

which harmonisation of British road and international rail regulations need be pursued is the intermodal freight container. The present proposals try to achieve this.

International Maritime Organisation (IMO)

18 The provisions of IMO's Dangerous Goods Code are based on the UN recommendations and are given effect, with some modifications, by the Merchant Shipping (Dangerous Goods) Regulations 1981. The provisions include the carriage of goods of Class 1 in Roll-on/Roll-off (Ro/Ro) ships. The present proposals will ensure that Ro/Ro traffic is facilitated, as well as harmonising the requirements for intermodal freight containers.

International Civil Aviation Organisation (ICAO)

19. Conveyance of explosives by air must be in accordance with the Technical Instructions on the Safe Transport of Dangerous Goods by Air issued by ICAO. These provisions are based on the UN recommendations and are given effect by the Air Navigation (Dangerous Goods) Regulations 1984. In general the carriage of explosives is limited to packages of low hazard (Hazard Division 1.4) or very low hazard (classified 1.4S). The present proposals on road conveyance are therefore likely to have little effect on air transport procedures and cause little difficulty for onward delivery by road from airports.

EC Initiatives

20. There are no EC directives on the conveyance of dangerous goods by road. If any should be developed in the future, it is expected that the technical provisions will be based on the (revised) ADR thereby harmonising EC with the UN recommendations and these present proposals.

MILITARY EXPLOSIVES AND MILITARY PERSONNEL

21. The Explosives Act 1875 provides at s.97(5) an exemption for the Crown. There is no such exemption in the HSW Act 1974. The Explosives Act is a 'relevant statutory provision' of the HSW Act (Schedule 1). It has therefore been necessary to determine a policy in respect of the conveyance of military explosives by road, on the one hand by Service personnel and on the other hand by civilians. The policy recognises that enforcement of the Services' Explosives Instructions can utilise the Services' Discipline Acts whereas this is inappropriate for the civilian employees of MOD and for the civilians employed by the contractors of MOD or visiting forces.

22. There are two alternatives in s.97(5). The first relates to explosives under the control of a Secretary of State etc. This has generally been construed as conveyance under strict military control (escort of Service personnel) such as might happen when a convoy of military 'A' vehicles is on manoeuvres or operations. The second alternative relates to explosives "otherwise held for the service of the Government" (ie otherwise than under control) when conveyed in accordance with the Regulations of a Secretary of State etc. This second alternative is the parent authority for the MOD's 1977 Regulations. It permits the explosives to be conveyed by civilians and contractors but the explosives must be for the service of British or Visiting Forces ('Military explosives' in the strict legal sense). In recent years as sales of warlike explosives and ammunition to foreign buyers have increased,

the term 'military explosives' has been misinterpreted; this was another reason for reviewing the policy on the second alternative in s.97(5).

23. It is intended that the conveyance of all explosives, military or civil, will be controlled by the Conveyance of Explosives by Road Regulations where the vehicle is manned by one or more civilians, whether they are employees of MOD or of a contractor of MOD or a visiting force. Enforcement will be by HSE. The 1977 MOD Regulations will be revoked. S.97(5) will be modified or repealed. There is an explicit exclusion in the proposals for members of the Armed Forces or Visiting Forces, acting in the course of their duties. The MOD has indicated informally that the Royal Navy, Army and Royal Air Force Service Instructions for conveyance of explosives by road will be revised to approximate them to the present proposals, to achieve broadly similar standards; and that enforcement will take account of the Services' Discipline Acts.

24 There is provision in the proposals for the "Secretary of State" (in practice the Secretary of State for Defence) to grant exemptions for the conveyance of military explosives. This power is expected to be used only exceptionally in cases of urgent need and where it is impracticable for HSE to use its normal procedures to grant the required exemption (eg in a period of tension when the "Defence imperative" requires that ammunition be conveyed at short notice to protect the nation). The exemption will specify the particular provisions, compliance with which would unduly hinder the attainment of the military objectives. An example might be the limitations on the quantity of ammunition in a vehicle (Schedule 2).

ENFORCEMENT

25 HSE will be the sole enforcing authority for these proposals. Enforcement will be achieved mainly during routine visits to factories, magazines etc and during incident investigations. The special arrangements for monitoring and auditing MOD's activities, made by HSE and MOD under the Defence Explosives Safety Authority (DESA) Agreement, will apply to conveyance at MOD's explosives establishments. When vehicles are on the road or in other public places to which Sections 5 and 6 of the Road Traffic Act 1972 apply, the police will play a limited role in regard to these regulations and act as the "eyes and ears" of the HSE in accordance with recently established liaison arrangements. Existing liaison with local authority enforcement officers, for licensed stores and registered premises, will be maintained in order to keep HSE informed of loading and unloading practice on such premises.

REPEALS AND REVOCATIONS

26 It is proposed to repeal S.97(5) of the Explosives Act 1875 on the assumption that by the time these proposals become law the other modes of conveyance will already be updated by the Dangerous Substances in Harbour Areas Regulations and a revision of British Rail Explosives Byelaws etc. In each of the regulations under the HSW Act (which does not exempt the Crown) the 'Defence Imperative' is accommodated without recourse to S.97(5). Military and commercial explosives will be subject to the same provisions in the main, so a separate statutory instrument for military explosives will be unnecessary. S.5 will have to be modified to accord with modern concepts of 'keeping' and 'conveyance'. The full list of revocations, including redundant amending orders, is as follows:

Order of Secretary of State No 11 dated 20 September 1924 (byelaws as to the conveyance of explosives on roads, and in certain special cases);

Order of Secretary of State No 11A dated 11 December 1939 (as to conveyance of detonators and electric detonators with other explosive);

Order of Secretary of State No 11C dated 24 August 1943 (making a byelaw relating to the conveyance of explosives in a carriage or boat whilst carrying or plying for private passengers);

Order of Secretary of State No 11D dated 7 February 1944 (altering the byelaws relating to the conveyance of detonators and electric detonators with other explosive and to the quantity of explosive which may be conveyed in any one carriage);

Conditions of the Secretary of State dated 11 July 1933 (conditions approved for the employment of petrol-driven and oil-driven vehicles);

The Conveyance of Explosives Byelaws 1951;

The Conveyance of Explosives Byelaws, SI 1958 No 230 (as to separation of detonators from other explosives and the maximum quantity of explosives in a carriage or boat);

The Conveyance by Road of Military Explosives Regulations, SI 1977 No 888.

It may be possible to revoke the whole of OSS 11 but powers to control explosives on private railways and canals may still be needed. Byelaw 3 of OSS 11 prohibits explosives in dustbins and the handing of explosives to dustmen etc; it is considered that such matters are now covered more appropriately by other legislation. It may be considered necessary to retain some provisions of OSS 11. Comments are invited on the need to convey explosives on private railways and canals, to assist the Commission to make decisions on these matters.

EXEMPTIONS

27 The Health and Safety Executive is given authority to grant exemptions to the regulations provided that it is satisfied that standards of safety and security are not jeopardised.

STRUCTURE OF PROPOSALS

28 Apart from the draft regulations themselves, the proposals include a Code of Practice, which gives practical guidance on how to comply with the constructional and operational provisions of the regulations.

29 Several of the regulations have to be read in conjunction with the "List of Classifications of Explosives" or, in the case of military explosives, similar lists prepared by the Ministry of Defence. An extract from the draft list forms Part 4 of this document.

PARTICULAR TOPICS

Security

30 The overall aim has been that standards of security during conveyance should be raised to match those required for explosives in storage. It is proposed that certain items (designated in the "List of Classifications of Explosives") should (with limited exceptions) be constantly attended to prevent theft or interference. Representations have been received from industry that vehicles with sophisticated automatic warning devices are becoming available which would provide a satisfactory substitute for constant attendance as far as security is concerned. However, such devices would be of little use if there was no-one to respond to the warning. It may be feasible to alert authorities some distance from the vehicle. (The safety aspects might be covered by the provisions on placarding and selective routes). Comments on this matter would be welcomed.

Training

31 A new proposal is the requirement for drivers and attendants to receive adequate instruction and training, and to be given written instructions on the nature of the load. Formal training courses are not necessary. The level of instruction should correspond to the type of conveyance (Mode, type of explosives etc).

More stringent firefighting equipment requirements

32 The proposals include requirements for improved provision of fire-fighting appliances to be carried on the vehicle. These requirements take account of lessons learned from a fire in an explosives vehicle on the M4 in 1981 and are based on guidelines drawn up by the Ministry of Defence following experiments to ascertain the most effective types of fire-fighting appliance to counter the kinds of fire most likely to occur during road transport.

Placarding of vehicles

33 At present vehicles for commercial explosives are not placarded. The proposed system of placarding described in Schedule 3 of the draft regulations was based on the types of vehicle placard required for road tankers and tank containers. However this system is not appropriate in the case of packaged explosives which do not react en masse. The HAZCHEM coding is not applicable for explosives of Class 1; the UN Division number within Class 1 is used instead to provide the necessary key to emergency action.

34 There is already a well-established system of placarding vehicles conveying military explosives, comprising a simple orange diamond bearing the Division number. Since this system is included in the Home Office Manual of Firemanship and fire brigades are fully conversant with it, there may be advantages in extending such placards to commercial explosives. Yet another option is to require simply the two blank ADR reflective orange rectangular plates. Comment is therefore invited on adoption of one of the two simpler systems of placarding in place of that embodied in the draft regulations.

35 Representations have been received that loads of limited quantities of certain types of explosives (eg fireworks) should be exempt from placarding. Comments are invited on this suggestion.

Freight containers

36 The use of freight containers for explosives by any mode of transport is deemed to be prohibited by the Packing of Explosive for Conveyance Rules (SI 1949 No 798). Also the maximum amount of explosive which may be carried on any vehicle is limited to 5 tonnes by Order of Secretary of State No 11. However these limitations proved severely restrictive to overseas trade which is based increasingly on the use of freight containers. HM Chief Inspector of Explosives in 1983 issued a Certificate of Exemption allowing conveyance of up to 16 tonnes of explosives in a freight container, subject to the observance of stringent conditions so that safety standards were not jeopardised. Conveyance operations under this exemption are being monitored with a view to eventual permanent legislation in this area.

37 The draft regulations in this Consultative Document are intended to supplant the Certificate of Exemption for a freight container on a road vehicle and to extend the limit to a fixed body vehicle subject to similar safeguards.

Increase in quantity limit to 16t

38 It is proposed that the present maximum quantity of 5t (net explosive content) on one vehicle should be increased to 16t. This increase is not considered to prejudice safety because of the additional constructional and operational safeguards required under the new regulations. Another consideration which has been taken into account is the fact that the area affected by an explosion does not increase in direct proportion to the amount of explosives involved. In the present case the quantity of explosives may therefore be increased more than three-fold without a corresponding increase in the area at risk.

39 The reduction in the number of vehicle-miles needed to convey a given quantity of explosives will reduce the probability of a traffic accident. There have been very few accidents on roads where the explosives contributed to the effects. The overriding consideration is the protection of the crew of the explosives vehicle and other road users from the risk of injury in the traffic accident itself. In the unlikely event that an accident did cause an explosion of the 16t load, the consequences might be potentially more serious but this factor is outweighed by other considerations. This doctrine is crucial to the exploitation of the modern intermodal freight container which affords the possibility of overall improvement in standards of safety and security of the explosive load.

Recognition of inherent safety of explosives in Division 1.5

40 The UN system of classification distinguishes between explosives which are susceptible to mass explosion (Division 1.1) and those which are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport (Division 1.5). As a minimum requirement any explosive substances assigned to Division 1.5 must not mass explode in a specified external fire test. In the USA and Canada industry is encouraged by incentives in the legislation to use inherently safer substitutes (eg. those blasting agents of the slurry, water gel and emulsion types which are not sensitive to a blasting cap and are assigned to Division 1.5) in place of the more traditional blasting explosives based on nitroglycerine which are assigned to Division 1.1. One incentive is to permit larger quantities of Division 1.5 (blasting agents) in a vehicle.

41 The Classification and Labelling of Explosives Regulations 1983 make provision for explosives to be assigned to Division 1.5 but so far there is no incentive in British legislation for industry to make greater use of such explosives. In the present proposals both types of blasting explosives (Divisions 1.1 and 1.5) are treated alike except for placarding and documentation. While no representations have been received for less stringent provisions on the construction of vehicles or quantity limits for explosives in Division 1.5, it is felt that such matters ought to be determined now if the new Regulations are to remain unchanged for many years ahead. Views are therefore sought on how the most effective use may be made of the classification 1.5 in these proposals.

Low risk explosive substances

42 Another special case, not to be confused with Division 1.5, is a group of 'low risk' explosives in Division 1.1 mentioned in a footnote to Schedule 2. The MOD made representations at an early stage that one of the most widely used demolition explosives (PE 4) should be permitted to be conveyed in the sort of vehicles and quantities which had been commonplace for decades and were permitted by the 1977 Regulations. This explosive is designed to be 'cap sensitive' so it cannot be considered for Division 1.5. MOD carried out an extensive programme of testing to demonstrate the low sensitiveness and low explosiveness of PE 4. Provision has been made in Schedule 2 to meet the MOD's request. This method was chosen, rather than granting an exemption certificate after the Regulations came into force, because PE 4 is likely to be just the first of a number of explosives which have the necessary characteristics.

Mixed consignments of explosives

43 The UN Orange Book recommendations (paragraph 4.6, 1983 edition) prescribe the basic rules for segregation of goods of Class 1 of different compatibility groups, and the procedures to be adopted when it is necessary to mix in conveyance goods of different compatibility groups and/or different hazard divisions. These are elaborated for sea transport in the Department of Transport's Blue Book (paragraph 6.2, 1984 edition). A more recent review of mixing rules for explosives, for storage and transport, has been undertaken jointly by MOD and HSE at the instigation of the Defence Explosives Safety Authority. The recommendations have not yet been endorsed but they are broadly in line with the proposals in Appendix 1 to the draft Code of Practice for the proposals on conveyance of explosives by road. It is intended to revise Appendix 1 in the light of this more recent (MOD/HSE) study in order further to refine the mixing rules. This may result in slightly more flexible and less onerous mixing rules. Comments are invited.

Use of liquefied petroleum gas as fuel

44 Liquefied petroleum gas (LPG) is expected to come into increasing use in the future as a vehicle fuel. The flammability hazard presented by LPG in a properly designed system is considered to be no greater than that of petroleum spirit. It is therefore proposed that the use of vehicles fuelled by LPG should be allowed except for the largest quantities of explosives. Another innovation is the proposal to allow electrically-powered vehicles.

Future status of traditional consignments in powder vans

45 As explained in paragraphs 2 to 4 of the proposed Code of Practice, the traditional powder van may be used under more than one mode. This provides flexibility for the operator who may opt for Mode 3 (basic precautions) when this suits his load or Mode 4 (additional precautions) when the occasion demands it.

Exemptions for site, mine and quarry vehicles

46 The Commission seeks the views of industry on the necessity for the exemptions for vehicles for which no excise duty is payable (eg fork lift trucks used in factories) and vehicles operating between parts of a construction site, mine or quarry (draft Regulation 3(2)(c) and (d)).

47 Consideration is being given to removal of these exemptions unless a strong case can be made (on grounds of cost or otherwise) for their retention. Representations have been made that such exemptions might be abused.

Notice of consignment

48 The Commission is considering extending the requirements of Regulation 14(1)(b) to all quantities of substances and articles in the stated divisions (ie deletion of the 100 kg threshold). Comments are invited on the ramifications of eliminating the threshold.

Articulated vehicles and trailers

49 It is proposed to allow articulated vehicles to convey explosives, as there is no evidence to establish that these are less safe than rigid vehicles. The use of drawbar trailers will be allowed.

Double manning

50 It is proposed that when a vehicle carrying larger quantities or more hazardous types of explosive is actually travelling (ie not during stops or unloading or loading) the driver must be accompanied by a second person (the "attendant"). This requirement is separate and distinct from that for constant attendance which essentially is directed at times when the vehicle is stationary. The person who carries out the function of constant attendance may be someone other than the driver or driver's mate.

51 A second man is required for certain loads in ADR and British regulations. He may help assure the safety and security of the explosives on long journeys and/or in case of accident, illness or severe weather. In some circumstances however it is questionable if the substantial cost of the second man is commensurate with the benefits. Comments on this matter are invited taking cognizance of the proposed provision of hazard warning signs and the availability of radio communication. Quantitative assessments of costs would be particularly welcome.

Quantity limit for articles classified 1.1 F

52 For many years it has been good practice to store and convey detonating fuzes separately from the bombs, shell and warheads to which they belong. Many regulations prohibit or restrict the conveyance of fuzed high explosive munitions. The UN system of classification assigns fuzed and unfuzed articles

to different compatibility groups in order to facilitate the formulation and observance of such restrictions. Technological developments in the safety and reliability of fuzing systems have blurred the distinction between fuzed and unfuzed munition hazards; furthermore, logistic and operational developments have created a demand to convey fuzed munitions. Some commercial explosive articles may also need to be conveyed with the detonating fuze assembled. Provided the fuze is fitted with effective protective features, there is no objection in principle since the risk of accidental initiation of the main charge can be almost as small in the case of a properly safeguarded fuzing system as with an unfuzed article. The UN has recognised this and defined compatibility groups for articles fitted with well safeguarded fuzes, and Compatibility Group F for articles fitted with detonating fuzes lacking such a high standard of safeguards. This enables regulatory authorities to discriminate against the less safe articles.

53 The penalty initially suggested for road conveyance of articles classified 1.1F was that the maximum quantity permitted by Mode 3 should be 50 kg. This was derived from the corresponding limit of 100 lb. in OSS 11. (There are no exact equivalents so the comparison is not direct). MOD representatives foresaw that such a penalty would impose severe financial and operating restrictions on the conveyance of fuzed mines in particular. An alternative limit of 250 kg was considered but this was still unacceptable for MOD.

54 It is felt that much of the MOD's problem arose from its conservative interpretation of the definition of Compatibility Group F. In order to clarify the concepts, the UK sought NATO and UN support for a revision in the wording of the definition and this was adopted in August 1984. The MOD is now re-classifying many munitions hitherto assigned to Compatibility Group F, so the size of the problem is much reduced. However there is still a difference of views between those who suggest the limit should be about 2,500 kg, and those who feel a more severe penalty should attach to Compatibility Group F. Whatever value is chosen will be arbitrary because there is insufficient statistical data on which to base objective, quantitative assessments of risk and hazard. Comments are invited on what limit would provide an effective and a realistic deterrent to designers proposing fuzing systems without effective protective features and, furthermore would reduce the potential consequences of an explosion to offset the greater likelihood of such an event during conveyance by road of articles classified 1.1 F compared with 1.1 D and 1.1 E.

Segregation of detonators from high explosives

55 A matter of great practical importance is the segregation of electric detonators from high explosives. It is a fundamental feature of the UN system of classification that articles containing a primary explosive which is sensitive are assigned to a different compatibility group from that for relatively insensitive substances (secondary explosives). Thus electric detonators are assigned to Compatibility Group B while blasting explosives and other high explosives are assigned to Compatibility Group D. In storage in Britain it is usual to keep detonators in a separate magazine or steel annex to avoid any possibility of an explosion of the detonators being communicated to the high explosives. In transport by sea, Regulation 11(1)(c) of The Merchant Shipping (Dangerous Goods) Regulations 1981 stipulates that "detonators are effectively segregated from all other explosives"; the Blue Book amplifies this and specifies that separate compartments of the ship are generally necessary, though there is a concession for small vessels whereby the same compartment may be used provided the articles of Compatibility Group B are separated by a specified bulkhead and at least 6 metres distance from high explosives.

56 In the case of road transport, prior to 1924 detonators had to be delivered in a separate vehicle from that used to deliver blasting explosives to mines and quarries. This was commercially prohibitive and was evaded. As a compromise, OSS 11 in 1924 permitted up to 2,000 electric detonators to be conveyed in the same vehicle as blasting explosives provided they were kept in a substantial, felt-lined wood or metal case stowed as far away from other explosives as reasonably practicable. In 1939 the permitted number of detonators was increased to 6,000; further increased in 1944 to 10,000 and in 1958 to 20,000.

57 It is suggested that the cumulative effect of all these concessions is that the original design of detonator transit case is no longer appropriate. Considering also that little attempt is made in practice to stow the case well away from other explosives, it is very doubtful if the original objective of preventing communication of explosion from the detonators to the blasting explosives would now be attained. The present proposals therefore re-state clearly the objective to be achieved by the case. It is expected that cases currently used will have to be replaced by better designs, to be type-tested, or different practices adopted. The USA Department of Transportation has revised its own regulations in this regard in recent months. Comments are invited on the feasibility and cost of designing detonator transport cases which will prevent communication of explosion from the detonators to the high explosives immediately adjacent to the case. If it is decided that it is not reasonably practicable to prevent communication of explosion, an alternative might be to require insulation to give time for evacuation.

Transitional period

58 It is proposed to allow a transitional period not exceeding 3 years to allow industry to comply fully with the constructional requirements for vehicles. All other provisions will come into force immediately. Comment is invited on this proposal.

COSTS AND BENEFITS

59 In addition to consolidating the safety of workers and the public, the Health and Safety Commission has also recognised that some changes in the controls are necessary to remove barriers to economic trade in explosives and has taken the opportunity to make significant improvements in security provisions, in view of the criminal use of explosives in recent years. These improvements are generally thought to reflect current best practice in the industry and will become mandatory for most explosives of Class 1. Areas of potential additional cost arising from these proposals have been identified but their impact must be judged in relation to the scope of the proposed regulations and the extent to which organisations already comply voluntarily.

Additional costs

60 Additional costs will be incurred by some operators who will have to fit extra safety or security equipment to their vehicles. Preliminary estimates by HSE of those additional costs to purchasers, taking account of experience in HSE and MOD which have already decided to fit some equipment voluntarily, are shown below (although VAT payments would not be reflected in the resource costs to society of such equipment):-

(a) One portable fire extinguisher rated at least 13B under BS 5423 (or several extinguishers which, taken together, give that rating) costs (for extinguisher, fixtures and labour) £25.

(b) Two fire extinguishers, each 9 litres water-gas type, rated 13A in BS 5423 cost (for extinguishers, fixtures and labour) £130.

(c) Anti-theft devices for a vehicle used in Mode 2 (paragraph 46 of the Code of Practice) in circumstances where it is not constantly attended, cost £100.

HSE has no means of estimating how many vehicles already have one or more fire extinguishers, or how many vehicles used by explosives engineers etc. will need to be fitted with additional anti-theft devices, so it is not yet possible to estimate the overall costs to industry. Comments are invited on these preliminary estimates of unit costs and of the numbers of vehicles involved.

61 The case for placarding road tankers and tank containers has already been made. Packaged explosives of Division 1.1 may explode in mass as though they were in bulk. The same applies to explosive articles of Division 1.1 which are conveyed unpacked (eg aircraft bombs). Vehicles conveying other explosives, in packaged form or as unpacked articles, may be treated in the same way as vehicles conveying non-explosive dangerous goods under the proposed Dangerous Substances (Conveyance by Road in Packages etc) Regulations as regards placarding. Until it is decided which form of placard is to be used for packaged goods generally, it is not possible to estimate the cost of the placards for explosives. However, preliminary estimates by HSE of the range of costs are as follows:

(a) Dedicated explosives vehicles are likely to have permanent fixtures to carry one of a range of reusable signs in metal or rigid plastics. Cost of base panels and frames plus fitting is £75 per vehicle.

(b) Vehicles used only occasionally to convey explosives are likely to use self-adhesive base panels and hazard warning signs, one set for each journey. Cost of throwaway signs is £12 per journey though bulk purchasing and the simpler form of signs would reduce this considerably, possibly to £3 per journey.

62 Where the requirements for fire-resistance necessitate non-standard vehicles or "one-off" modifications to the existing fleet, there will be substantial additional costs to industry. This applies also to special freight containers or special skeletal trailers for standard freight containers. Comments are invited which would indicate to the Commission how many special vehicles, trailers and freight containers are likely to be needed by the explosives industry and what the unit cost might be for the special features required to comply with these proposals.

63 To inform the Chief Officers of Police of a range of routes, and to secure their agreement so that individual journeys can be based on them, will involve junior management in anything from about one hour to several days work. This is unlikely to occur at regular intervals although updating may be required from time to time. The cost to industry of, for example, 1 day's work by a junior manager is about £65. Similar costs will presumably be

incurred by the police authorities. This applies only to special journeys under Mode 4, see Regulation 16(c). A few firms have experience of the costs involved in liaison with the police for conveying freight containers under the current Exemption Certificate issued by HM Chief Inspector of Explosives; they are invited to inform the Commission of their experience and costs.

64 In the past the standard of training for crews dedicated to the conveyance of explosives appears to have been satisfactory and no additional costs are envisaged as the result of these proposals, apart from a minimal amount to inform them of these new provisions and their resultant new duties. This could be done during routine refresher courses or during a special ½ hour talk (cost £8 for one crew and the junior manager involved). In the case of casual journeys by general carriers, under contract to the explosives consignor, past arrangements have sometimes left much to be desired. The regulatory proposals are positive in requiring better informal instruction for the crews of vehicles making casual journeys with explosives. In future any attendant will have to be chosen and instructed, however informally, so as to ensure that he appreciates the hazard of the load and can make a useful contribution to the safety and security of the load. HSE estimates a recurring, additional cost of £4 representing a few minutes discussion between the consignor or his agent and the driver and his attendant, prior to each journey by a general carrier not familiar with explosives hazards. To issue the vehicle crew with appropriate emergency instructions, such as the MOD's "Notice to Crews of Road Vehicles carrying Military Explosives" (ESTC Leaflet 20, Dec 83), will cost an extra 50p if a large order for monochrome printing is arranged.

65 Some firms and government departments who use general carriers to transport explosives on their behalf consider it unlikely that carriers will accept such traffic in the future if they are required to comply with the proposed provision on instruction of crews. This could therefore become an important issue and the Commission would welcome comment on the matter.

HSE Resources

66 As part of the evaluation of the effect of these proposals there will be a programme of Planned Special Visits (PSV) by HM Explosives Inspectors. HM Chief Inspector of Explosives tentatively proposes to allow the equivalent of ¼ man-year (cost £4,200) for this purpose. After this initial period it is expected that enforcement will be carried out during routine visits to premises as part of the Explosives Inspectorate's normal activities of general enforcement of the Explosives Act etc. The extra time during routine visits plus an allowance for spot checks and for additional liaison with local authorities and police indicates that a permanent additional requirement of 0.4 man-year per year of Inspector time will be necessary for enforcement. This will cost £6,700 pa.

Cost savings

67 The use of vehicles or freight containers holding a maximum of 16 tonnes net explosive substance instead of the existing maximum of 5 tonnes (virtually gross) will permit a substantial reduction in the number of vehicle journeys in certain circumstances. This should reduce operating costs overall even though many journeys from manufacturer's depots to customers (such as mines and quarries) involve local journeys with small quantities. Comments are invited on the likely effects of the new maximum quantity and on the overall cost reductions accruing.

68 Any cost savings arising from the use of freight containers loaded to near the new 16 tonnes limit will have to be calculated after taking into account the possible need for new mechanical handling equipment for unitised loads and freight containers. There is already a gradual move towards the use of pallets instead of man-handling 50 lb packages of explosives. The new provisions may catalyse change and it may be difficult to separate the cost saving attributable to the new proposals from that attributable to other developments in industry.

69 Paragraph 51 draws attention to possible major cost savings if the use of 'double manning' of vehicles, for safety and security reasons, is replaced by single manning together with alternative safeguards to maintain standards. The Commission itself will be unable to quantify such potential savings and invites industry to submit information on this aspect of future traffic.

70 The proposals are designed to harmonise with international agreements and recommendations on conveyance of dangerous goods, and with the UK's own legislation on conveyance of dangerous goods generally. This harmonisation, together with the replacement of all existing legislation on road conveyance of explosives by a single set of regulations and a code of practice, should make the legislation easier for users to observe and therefore reduce costs. However it is difficult to quantify such savings at this stage.

71 The proposals are designed to fit in with modern transport technology. Subject to suitable safeguards there is provision for LPG and electric propulsion as well as diesel and petrol which are permitted at present. The resultant flexibility in power sources should offer cost savings. Similarly, greater flexibility to introduce new types of vehicle and new lifting methods may also give rise to savings, especially in the case of the less hazardous types of explosives (Division 1.4). Any estimate of quantitative savings at this time would be highly speculative.

Areas of benefits

72 The standard of safety in existing legislation is generally considered to be good. Annual reports of HM Chief Inspector of Explosives record only 5 accidents affecting the explosives load during road conveyance in the last 30 years. However there is no room for complacency. The last one closed the M4 for 7 hours on 15 September 1981 at an estimated minimum cost of £100,000. (This assumes 2,000 vehicles per hour and 1.5 men per vehicle, with wage/salary rate of £2.50 per hour and an equal sum for the cost of the vehicle itself).

73 It is not possible to quantify the benefits that may be achieved by the improvement in security required by these regulations, although their nature can be clearly seen. Current legislation permits quantities of explosives of 50 kg or less to be left in vehicles during a conveyance operation completely unattended. This is considered to be unacceptable in present conditions.

COMMENTS ON CERTAIN SPECIFIC REGULATIONS

General

74 It is intended that HSE will publish guidance, in the usual HS(R) series, but this will not be developed until after the Regulations have been made and feed-back from industry has indicated the areas which might benefit from such guidance. However there are a few matters on which background information might assist readers to understand the basis of the present proposals. Comments on these specific Regulations follow in the order in which they arise in the draft Regulations.

Prohibition on the conveyance by road of certain explosive articles and explosive substances (Regulation 4 and 7)

75 Any new explosive article or substance must be classified, in accordance with the Classification and Labelling of Explosives Regulations 1983, before it is conveyed. In the event that HSE or MOD considers the explosive to be so dangerous that it ought not to be conveyed at all, in the form and packaging specified in the application, they would not accept it into Class 1. It would be included in the List of Classifications of Explosives etc and specified there as not being approved for conveyance by road.

76 There are two circumstances where an explosive might have to be conveyed by road without submission of an application for classification. The first is where a sample has to be sent to a test house to acquire the data needed by HSE or MOD in order to assess and classify the explosive. Provision is made in Regulation 7(a) and the last column of Schedule 2. The second is where a terrorist bomb or other unclassified explosive needs to be conveyed for the purpose of its safe disposal. This is covered by Regulation 3(2)(b) in conjunction with Regulation 3(3).

77 A new explosive may be accepted into Class 1 but assigned to Compatibility Group K or L on account of its very hazardous properties. If it is necessary to convey such an unusual explosive by road, an application may be made to HSE for a certificate of exemption under Regulation 22(1). The HSE would have to be satisfied that the overall system of safety proposed for the conveyance is adequate. The exemption would cover any number of consignments so long as the conditions of the exemption were observed.

Prohibition on the use of vehicles except under a listed mode (Regulation 5 and 7)

78 A "mode" is a specified combination of constructional features of a vehicle and operating conditions. The higher the number of the mode, the more stringent are the constructional and operating requirements and hence the greater the quantity of explosives which may be conveyed. There is already recognition in OSS 11 and the 1977 Regulations that larger loads of explosives warrant extra safety precautions. The present proposals extend this concept and explicitly link the relative probability of an accidental explosion (in terms of the compatibility group of the explosives and the chosen mode) and the potential consequences of such an explosion (in terms of the quantity and hazard division) as shown in Schedule 2. Regulation 5 relates to Schedule 1 where the modes are defined; Regulation 7 relates to Schedule 2 where the quantity limits are set out.

Conveyance under Mode 1 (Regulation 6)

79 This Regulation is intended to provide a national basic standard for the conveyance of small quantities of low risk explosives by bus, taxi or hired coach. It is not intended to supplant any existing bye-laws for public service vehicles but rather to provide a model for harmonisation of such bye-laws on the basis of the UN classifications and to ensure basic controls in cases where there are no bye-laws.

Duty to ensure safe conveyance (Regulation 15(1))

80 In a convoy, crashes at high speed are a particular danger since such impacts could conceivably result in explosions and loss of life exceeding that normally associated with traffic accidents. The Code of Practice at paragraph 35 draws attention to the point and suggests a separation of at least 200m which is derived from the distance prescribed in the Highway Code for stopping at 70 mph in good conditions.

COMMENTS INVITED

81 Comments on these proposals are invited and should be sent to the address shown on the inside cover.

Comments are particularly invited on the following aspects of the proposals:-

(a) the use of automatic security devices (paragraph 30);
(b) placarding (paragraphs 33-35);
(c) recognition of the inherent safety of Division 1.5 (paragraphs 40-41);
(d) mixed consignments of explosives (paragraph 43);
(e) exemptions for site, mine and quarry vehicles (paragraphs 46-47);
(f) notice of consignment (paragraph 48);
(g) double manning (paragraphs 50-51);
(h) quantity limit for articles classified 1.1 F (paragraphs 52-54);
(i) segregation of detonators from high explosives (paragraphs 55-57);
(j) transitional period (paragraph 58);
(k) costs and benefits (paragraphs 59-73); and
(l) the balance between the Regulations and the Code of Practice.

PART 2

HEALTH AND SAFETY

THE CONVEYANCE OF EXPLOSIVES BY ROAD REGULATIONS 198

Draft proposals for Regulations to be made under sections 15(1), (2), (3)(a) and (c), (4), (5), (6)(b), 47(3) and 82(3)(a) of, and paragraphs 1(1), (2), (3) and (4), 3, 4(1), 6, 7, 12, 14, 15(1), 16, 18(a) and 20 of Schedule 3 to, the Health and Safety at Work etc. Act 1974(a).

ARRANGEMENT OF REGULATIONS

1. Citation and commencement.

2. Interpretation.

3. Application.

4. Prohibition on the conveyance of certain explosive articles and explosive substances.

5. Prohibition on the use of vehicles in the conveyance of explosives except under a listed mode.

6. Conveyance of explosives under Mode 1.

7. Conveyance of explosives under Mode 2, 3 or 4.

8. Compatibility Groups.

9. Divisions.

10. General constructional and other requirements for vehicles and freight containers used under Mode 2,3 or 4.

(a) 1974 c.37; section 15 was amended by the Employment Protection Act 1975 (c.71), Schedule 15, paragraph 6.

11. Additional requirements for vehicles and freight containers used under Mode 4.

12. Regulations 10 and 11 not to apply.

13. Placarding under Mode 3 or 4.

14. Notice of consignment.

15. Duty to ensure safe and secure conveyance under Mode 2, 3 or 4.

16. Further precautions against accidents to be taken during conveyance of explosives under Mode 3 or 4.

17. Minimum age limits for persons engaged in the conveyance of explosives under Mode 2, 3 or 4.

18. Instruction and training of drivers and attendants.

19. Procedure in the event of an accident under Mode 2,3 or 4.

20. Defence in proceedings for contravening these Regulations.

21. Enforcement.

22. Power to grant exemptions.

23. Modification of the Explosives Act 1875.

24. Repeals and revocations.

Schedule 1 The modes of conveyance.

Schedule 2 The limits on the type and quantity of explosives permitted to be conveyed under Mode 2, 3 or 4.

Schedule 3 Placarding under Mode 3 or 4.

Schedule 4 List of revoked instruments.

Citation and commencement

1. These Regulations may be cited as the Conveyance of Explosives by Road Regulations 198 and shall come into operation on .

Interpretation

2. - (1) In these Regulations, unless the context otherwise requires -

"the 1983 Regulations" means the Classification and Labelling of Explosives Regulations 1983;(a)

"Compatibility Group" and "Compatibility Group letter" have the same meaning as in Regulation 2(1) of the 1983 Regulations;

"convey" and related expressions shall be construed in accordance with paragraph (5);

"Division" and "Division number" have the same meaning as in Regulation 2(1) of the 1983 Regulations;

"explosive" means -

(a) an article or substance which has been assigned on classification to Class 1 as defined in Regulation 2(1) of the 1983 Regulations, or

(b) an article or substance which has not been classified and is conveyed under Regulation 4(1)(b) of the 1983 Regulations solely in connection with an application for its classification;

"explosive article" and "explosive substance" have the same meaning as in Regulation 2(1) of the 1983 Regulations;

(a) S.I. 1983/1140.

"freight container" means a container as defined in Regulation 2(1) of the Freight Containers (Safety Convention) Regulations 1984;(a)

"military explosive" has the same meaning as in Regulation 2(1) of the 1983 Regulations;

"motor vehicle" means a mechanically propelled vehicle intended or adapted for use on roads;

"operator" means in relation to a vehicle -

(a) a person who holds, or is required by section 60 of the Transport Act 1968 (b) to hold, an operator's licence for the use of that vehicle for the carriage of goods on a road,

(b) where no such licence is required, the keeper of the vehicle;

"portable magazine" means a container the safety and security of which has been approved for the time being in writing by the Health and Safety Executive for the purposes of these Regulations or by means of a special packing authority granted under Rule 12 of the Packing of Explosive for Conveyance Rules 1949(c) and which -

(a) is of a permanent character and strong enough to be suitable for repeated use, and

(b) is designed to be secured or readily handled or both and has the appropriate fittings;

"road" has the same meaning as in section 196(1) of the Road Taffic Act 1972 (d)
"semi-trailer" means a vehicle which is constructed or adapted to form part of an articulated vehicle so that when it is uniformly laden and attached to the motor vehicle intended to tow it, not less than 20% of the weight of the load is borne by the motor vehicle;

(a) S.I. 1984/1890.
(b) 1968 c.73; section 60(1) is modified by S.I. 1980/637.
(c) S.I. 1949/798, [the relevant amending instrument is S.I.]
(d) 1972 c.20.

"trailer" means a vehicle constructed or adapted to be towed but does not include a semi-trailer;

"vehicle" includes a motor vehicle, trailer and semi-trailer.

(2) Unless the context otherwise requires, any reference in these Regulations to -

(a) a numbered Regulation or Schedule is a reference to the Regulation or Schedule in these Regulations so numbered;

(b) a numbered paragraph is a reference to the paragraph so numbered in the Regulation or Schedule in which that reference appears.

(3) Any reference in these Regulations to the quantity of any explosive shall be construed as a reference to the net mass of explosive substance therein contained.

(4) For the purpose of these Regulations a motor vehicle and a trailer or semi-trailer attached to it shall be deemed to be one vehicle and articles or substances or both of them conveyed in one vehicle shall be deemed to be conveyed together.

(5) For the purpose of these Regulations, conveyance begins with the commencement of loading for the purpose of conveyance by road and ends when unloading is completed whether or not a vehicle is on the road at the material time and "convey" and other related expressions shall be construed accordingly.

Application

3.- (1) These Regulations shall apply to the conveyance of explosive articles and explosive substances by road.

(2) Regulation 5 and Regulations 7 to 14 and 16 to 22 shall not apply to conveyance -

(a) by members, acting in the course of their duties, of -

(i) Her Majesty's forces,

(ii) visiting forces within the meaning of any of the provisions of Part 1 of the Visiting Forces Act 1952,(a)

(iii) any headquarters or organisation designated for the purposes of the International Headquarters and Defence Organisations Act 1964;(b)

(b) for the purposes of explosive ordnance disposal under the direction of a member of Her Majesty's forces or a constable,other than in connection with dumping at sea;

(c) where the motor vehicle has been exempted from excise duty by the Secretary of State under section 7(1) of the Vehicles (Excise) Act 1971;(c) or

(d) where the vehicle only conveys the explosives for the purpose of crossing directly between parts of the same construction site, mine or quarry.

(3) Regulation 4 shall not apply to conveyance falling within paragraph (2)(b).

(4) Regulation 15 shall not apply to conveyance falling within paragraph 2(a) or (b).

(a) 1952 c.67.

(b) 1964 c.5.

(c) 1971 c.10.

Prohibition on the conveyance of certain explosive articles and explosive substances

4. Subject to Regulation 3(3), no person shall convey any explosive article or explosive substance which, on classification under the 1983 Regulations, has been excluded from Class 1 and designated as presenting a significant hazard from explosion unless it has been approved in writing for the time being for conveyance by road by the Health and Safety Executive.

Prohibition on the use of vehicles in the conveyance of explosives except under a listed mode

5.- (1) Subject to Regulation 3(2), no person shall use any vehicle in the conveyance of explosives except under one of the modes of transport listed in Schedule 1.

(2) A person may choose to use a vehicle under a lower numbered mode than that under which it could be used.

Conveyance of explosives under Mode 1

6.- (1) A vehicle shall not be used in the conveyance of explosives under Mode 1 except as specified in paragraph (2).

(2) Under Mode 1 each passenger -

(a) may use the vehicle for the conveyance of only distress signals, fireworks and safety cartridges or any of them, all suitably wrapped, to a maximum total quantity of 2 kilograms; and

(b) shall take all reasonable precautions for the prevention of accidents arising from explosives in his possession.

(3) This Regulation shall not be construed as affecting any requirement imposed by contract or by or under any enactment relating to the conveyance of explosives in a vehicle being used to carry passengers for hire or reward.

Conveyance of explosives under Mode 2, 3 or 4

7. The operator of a vehicle used in the conveyance of explosives under Mode 2, 3 or 4 shall ensure that -

(a) the limits on the type and quantity of explosives permitted to be conveyed set out in Schedule 2 are complied with;

(b) explosives in Compatibility Group K or L are not conveyed;

(c) explosives in different Compatibility Groups are not conveyed together unless all reasonably practicable measures have been taken to ensure that they may be so conveyed without significantly increasing either the probability of an accident or, for a given quantity, the magnitude of the effects of such an accident;

(d) (i) explosives are not conveyed together with acetylene or oxygen or, except when it is in the fuel tank of a motor vehicle, with diesel-oil, liquefied petroleum gas or petroleum-spirit,

(ii) under Mode 2, explosives may be conveyed together with such substances if the quantity of explosives conveyed does not exceed 30 kilograms; and

(e) explosives are not conveyed together with any other dangerous articles or dangerous substances or any other article or substance which is liable to cause or communicate fire or explosion unless --

(i) the other substance is ammonium nitrate and for the purpose of calculating the quantity of explosives that may be conveyed the aggregate load is deemed to be a substance in Division 1.1,

(ii) the explosives are in Compatibility Group S, or

(iii) all reasonably practicable measures have been taken to prevent the explosives being brought into contact with, and generally endangering or being endangered by, any such articles or substances.

Compatibility Groups

8. Where explosives in different Compatibility Groups are conveyed together, they shall, for the purpose of calculating the quantity of explosives that may be conveyed, all be deemed to be in whichever Compatibility Group amongst them permits the smallest quantity of explosives to be conveyed; except that under Mode 2 up to 1 kilogram of detonators may be conveyed together with up to 50 kilograms of blasting explosives if both are in separate and suitable containers and subject to any limitations imposed by Regulation 7(d).

Divisions

9.- (1) Except for the purposes of Regulation 13, explosives in Division 1.5 shall be deemed to be in Division 1.1.

(2) Subject to paragraph (3), where explosives in different Divisions are conveyed together they shall, for the purpose of calculating the quantity of explosives that may be conveyed, all be deemed to be in the lowest numbered Division amongst them.

(3) Explosives in Division 1.4 shall, when conveyed together with explosives in another Division, be ignored for the purpose of calculating the quantity of those other explosives that may be conveyed and those other explosives shall be ignored for the purpose of calculating the quantity of explosives in Division 1.4 that may be conveyed.

General constructional and other requirements for vehicles and freight containers used under Mode 2, 3 or 4

10.- (1) The operator of a vehicle used in the conveyance of explosives under Mode 2, 3 or 4 shall ensure that the vehicle and any freight container used in such conveyance are properly designed and constructed and are suitable for the purpose having regard to considerations of safety and security.

(2) Without prejudice to the generality of paragraph (1) -

(a) a motor vehicle shall be fueled by either -

   (i) diesel-oil, which under Mode 4 shall have a flash point greater than 55° Celsius determined in accordance with Part IV of Schedule 1 to the Classification, Packaging and Labelling of Dangerous Substances Regulations 1984(a),

   (ii) electricity,

   (iii) except under Mode 4, liquefied petroleum gas, or

   (iv) except under Mode 4, petroleum-spirit;

(b) a trailer or semi-trailer shall -

   (i) not be towed by anything other than a motor vehicle, and

   (ii) be constructed so as to be adequately braked or restrained if it becomes detached from the motor vehicle towing it;

(c) a vehicle carrying a freight container shall be fitted with adequate and appropriately positioned twistlocks which are engaged when the vehicle is in motion; and

(d) the gross weight of the vehicle, with the freight containers, shall not exceed 90% of the vehicle's plated weight.

(a) S.I. 1984/1244.

Additional requirements for vehicles and freight containers used under Mode 4

11. The operator of a vehicle used in the conveyance of explosives under Mode 4 shall ensure that the vehicle and any freight container used in such conveyance are so constructed, designed and positioned, as the case may be, that, so far as is reasonably practicable -

(a) there is no risk of ignition or initiation of the load;

(b) fire cannot start on the vehicle or, except where only small arms ammunition and no other explosive is carried, spread to the load either from the vehicle or from elsewhere;

(c) precautions can be taken to stop any unauthorised access to, or removal of all or part of, the load; and

(d) in the event of overturning access can still be had to the load.

Regulations 10 and 11 not to apply

12. Regulations 10 and 11 shall not apply -

(a) where -

(i) the vehicle is engaged in an international transport operation within the meaning of the Convention concerning International Carriage by Rail (COTIF) (a) as revised or re-issued from time to time, and

(ii) such conveyance conforms in every respect to the requirements of Articles .. to .. of that Convention and to the Regulations made thereunder;

(a) Cmnd.

(b) where the vehicle -

(i) is engaged in an international transport operation within the meaning of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), signed at Geneva on 30 September 1957, as revised or re-issued from time to time,

(ii) complies with the conditions contained in Annexes A and B to that Agreement, and

(iii) is certified pursuant to that Agreement as complying with it,

unless by provision of that Agreement the transport operation is one which is governed by national legislation; or

(c) where the vehicle is not, for the time being, subject to the provisions of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) by reason only that it i a vehicle belonging to or under the orders of the armed forces of Contracting Party.

Placarding under Mode 3 or 4

13.- (1) Subject to paragraph (2), the operator and the driver of a vehicle used in the conveyance of explosives under Mode 3 or 4 shall ensure that the motor vehicle, trailer or semi-trailer in which the explosives are actually carried is placarded with hazard warning panels as specified in Schedule 3, except that if the explosives are in a freight container, they shall ensure that the freight container is so placarded instead of the vehicle.

(2) Paragraph (1) shall not apply where the explosives carried in the vehicle or freight container are -

(a) in Division 1.4, and

(b) do not exceed 100 kilograms in quantity.

Notice of consignment

14.- (1) The following articles and substances shall not be conveyed unless the notice and intimation referred to in paragraph(2) have been given and received -

(a) any quantity of substance in Division 1.1;

(b) articles in Division 1.1, 1.2 or 1.3 and substances in Division 1.2 or 1.3 or any of them of a total quantity of more than 100 kilograms;

(c) an article or substance which is conveyed under Regulation 4(1)(b) of the 1983 Regulations solely in connection with an application for its classification;

(d) a military explosive; or

(e) any other explosive, unless it has been approved for consignment without notice by -

  (i) the Health and Safety Executive in "List of Classifications of Explosives" being a list issued by the Health and Safety Executive, as revised or re-issued from time to time, or

  (ii) the Health and Safety Executive or the Secretary of State in a licence issued in respect of its manufacture or importation.

(2) A person who consigns for conveyance, and the operator of a vehicle used in the conveyance of, an article or substance referred to in paragraph (1) shall before the road journey commences give to the person to whom they are to deliver the consignment, notice of the type and quantity of the explosives that are to be delivered and have received an intimation (either general or special) of the time at which that person is prepared to receive the consignment.

(3) A person shall not intimate under paragraph (2) that he is ready to receive any explosives unless he is ready immediately on receipt either to despatch them, use them or deposit them in a lawful place of keeping.

Duty to ensure safe and secure conveyance under Mode 2, 3 or 4

15.- (1) The operator of a vehicle used in the conveyance of explosives under Mode 2, 3 or 4 and all other persons engaged in the conveyance or otherwise responsible for the safety or security of the explosives shall perform their allotted functions properly and carefully and shall take all reasonably practicable measures to prevent accidents, to minimise the harmful effects of any accident which may occur and to prevent unauthorised access to, or removal of, all or part of the load.

(2) Without prejudice to the generality of paragraph (1) -

(a) loading and unloading once begun shall be carried through to completion with diligence and despatch and, except in an emergency, shall be attended by a competent person;

(b) except under Mode 2, explosives shall not be stowed in the cab of a motor vehicle;

(c) electro-explosive articles shall be stowed in accordance with any directions from the consignor concerning the prevention of accidental initiation;

(d) explosives shall be stowed so as to prevent unnecessary movement and to enable adequate access to be obtained in an emergency;

(e) portable magazines shall be adequately secured to the vehicle;

(f) the engine of a motor vehicle shall not be run while the motor vehicle is being refueled;

(g) where the type and quantity of explosives conveyed fall within Regulation 14(1)(a) to (e) a responsible person shall constantly be in attendance throughout the conveyance except -

(i) during stops in secure premises,

(ii) under Mode 2, where the vehicle is on the site where some or all of the explosives are to be used that day and adequate security precautions are taken;

(h) no person who is engaged in loading or unloading, or is in the vicinity of the explosives or vehicle, shall smoke while loading or unloading is taking place and, unless the only explosives being conveyed are in Division 1.4, Compatibility Group S when suitable precautions to prevent accidents shall be taken, no person who is engaged in the conveyance shall at any other time smoke while he is on, in or in the vicinity of the vehicle;

(i) except under Division 1.4, Compatibility Group S, no matches or other means of striking a light shall be carried and any tobacco and tobacco products carried shall be kept in a suitable container in the cab of the vehicle;

(j) no intoxicated person shall be allowed to be on, in or in attendance on, a vehicle at any time or to approach or remain near the vehicle or the explosives during loading or unloading;

(k) the operator shall ensure that where more than 2 kilograms of explosives are carried suitable fire-fighting equipment is carried on the vehicle, or if it has its own escort vehicle, on the escort vehicle;

(l) only one trailer may be towed at any one time and a trailer may not be used in conjunction with a semi-trailer.

Further precautions against accidents to be taken during conveyance of explosives under Mode 3 or 4

16. The precautions against accidents listed in sub-paragraphs (a) to (e) of this Regulation shall be observed at the appropriate times during the conveyance of explosives under Mode 3 or 4 -

(a) the driver shall ensure, at all times when the vehicle is in motion during the road journey, that he is accompanied by another person, known as an "attendant", except -

(i) where the load consists only of fireworks, explosives of Division 1.4, or a mixture of the two, when no attendant is required, or

(ii) in an organised convoy which has effective arrangements for communication between vehicles and planned arrangments for emergencies, when an attendant is required only in the leading and last vehicles and in the fifth and each successive fifth vehicle;

(b) the driver shall, so far as is reasonably practicable, follow a route away from towns and villages and avoid stopping or delay;

(c) under Mode 4 when the conveyance is of more than 5 tonnes of explosives in Division 1.1, Compatibility Group C or D, the driver shall follow a route agreed with the Chief Officers of Police of the relevant police districts;

(d) the driver shall check the vehicle and the explosives before the road journey begins, to ensure, so far as is reasonably practicable, that -

(i) all parts and accessories of the vehicle are in working order,

(ii) the explosives are properly stowed,

(iii) any twistlocks are in the engaged position, and

(iv) any portable magazine is adequately secured to the vehicle;

(e) no person shall allow the vehicle to be repaired except on the instructions of a competent person.

Minimum age limits for persons engaged in the conveyance of explosives under Mode 2, 3 or 4

17.- (1) Subject to paragraph (2) no person under the age of 18 years shall, under Mode 2, 3 or 4 -

(a) use any vehicle in the conveyance of explosives;

(b) be employed as the driver or attendant of such a vehicle;

(c) be made responsible for the security of the explosives;

(d) be allowed to go on or in such a vehicle except in the presence and under the supervision of a competent person.

(2) Paragraph (1) shall not apply to the conveyance under Mode 2 of distress signals, fireworks or safety cartridges.

Instruction and training of drivers and attendants

18.- (1) The operator of a vehicle used in the conveyance of explosives under Mode 2, 3 or 4 shall ensure that the driver and attendant -

(a) have received adequate instruction and training to enable them to understand -

(i) the nature of the dangers to which the explosives conveyed may give rise and the emergency action they should take, and

(ii) their duties under these Regulations; and

(b) each has written instructions in his possession giving an adequate description of the load, including the mode under which it is being conveyed, and his duties under these Regulations.

(2) The operator shall keep a record of such instruction and training received -

(a) by himself, if he is a driver or attendant; and

(b) by drivers and attendants in his employment, to whom a copy shall be made available.

(3) This Regulation shall not apply to the conveyance under Mode 2 of distress signals, fireworks or safety cartridges.

Procedure in the event of accident under Mode 2, 3 or 4

19.- (1) Under Mode 2, 3 or 4, persons engaged in the conveyance or otherwise responsible for the security of the explosives shall in the event of -

(a) spillage of the explosives; or

(b) damage to the explosives or their packaging such as to constitute a serious risk to safety;

ensure that -

(c) a competent person is informed and the matter dealt with as he directs; and

(d) precautions are taken for the security of the explosives and the safety of persons likely to be affected by ignition or initiation of the explosives.

(2) The competent person referred to in paragraph (1)(c) shall ensure, so far as is reasonably practicable, that any spillage, damaged explosives or explosives in damaged packaging are dealt with safely and securely.

(3) Under Mode 3 or 4, if the presence of the vehicle in any place constitutes a serious risk to safety, the driver, attendant or other person in attendance shall inform the Police and Fire Service either in person or through the 999 call system that the vehicle has stopped in that place and is carrying explosives and also take any necessary steps to warn the public of the hazard.

(4) The operator shall inform the Health and Safety Executive as soon as reasonably practicable, of any event occurring under paragraph (1) or (3).

Defence in proceedings for contravening these Regulations

20. In any proceedings for an offence under Regulations 4,5,6(2)(a),7,10,13,14,15(2),16(a),(c) or (e), 17,18 or 19(1)(3) or (4) it shall be a defence for any person to prove that he took all reasonable precautions and exercised all due diligence to avoid the commission of that offence.

Enforcement

21. Notwithstanding the provisions of the Health and Safety (Enforcing Authority) Regulations 1977, (a) the enforcing authority for the purposes of these Regulations shall in all cases be the Health and Safety Executive.

(a) S.I. 1977/746, amended by S.I. 1980/1744.

Power to grant exemptions

22.- (1) Subject to paragraph (2), the Health and Safety Executive may, by a certificate in writing, exempt from all or any requirements or prohibitions imposed by these Regulations any particular, or class of, explosive, person or vehicle and any such exemption may be granted subject to conditions and to a limit of time and may be revoked by a certificate in writing at any time.

(2) The Executive shall not grant any such exemption unless, having regard to the circumstances of the case, and in particular to -

(a) the conditions, if any, which it proposes to attach to the exemption; and

(b) any other requirements imposed by or under any enactment which apply to the case;

it is satisfied that neither the health and safety of persons who are likely to be affected by the exemption nor the security of the explosives will be prejudiced.

(3) The Secretary of State may exempt by a certificate in writing from all or any requirements or prohibitions imposed by these Regulations any particular, or class of -

(a) military explosive;

(b) person engaged in the conveyance of military explosives;

(c) vehicle used in the conveyance of military explosives;

and any such exemption may be granted subject to conditions and to a limit of time and may be revoked by a certificate in writing at any time.

Modification of the Explosives Act 1875

23. For Proviso (2) to section 5 of the Explosives Act 1875(a) except in so far as it applies to Northern Ireland substitute the following -

"(2) To the keeping of any gunpowder by any person when the same is being conveyed within the meaning of, and in accordance with, the Conveyance of Explosives by Road Regulations 198-.".

Repeals and revocations

24.- (1) Section 97(5) of the Explosives Act 1875 (b) is hereby repealed except in so far as it applies to Northern Ireland.

(2) The Instruments listed in Schedule 4 are hereby revoked except in so far as they apply to Northern Ireland.

(a) 1875 c.17.

(b) As extended by paragraph 4 of Schedule 2 to the Emergency Laws (Miscellaneous Provisions) Act 1947 (11 and 12 Geo. 6.c.10.).

SCHEDULE 1

Regulation 5(1)

THE MODES OF CONVEYANCE

Mode	Method of conveying explosives by road
1	In a vehicle being used to carry passengers for hire or reward.
2	In a private motor car and any other method of conveyance which does not fall under any other mode.
3	In a goods vehicle with basic safety precautions.
4	In a goods vehicle with additional safety precautions.

SCHEDULE 2

Regulation 7(a)

THE LIMITS ON THE TYPE AND QUANTITY OF EXPLOSIVES PERMITTED TO BE CONVEYED UNDER MODE 2, 3 or 4

HAZARD DIVISION	1.1							1.2	1.3	1.4		Unclassified articles/ substances (a)
COMPATIBILITY GROUP	A	B	F	G Substances	G Articles	C or D Substances	C Articles D Articles E or J	Any except K or L	Any except K or L	Any except K,L, or S	S	
MODE 2	0	1kg(b)	50kg	1kg	50kg	50kg	50kg	50kg	50kg	50kg	*	50kg
MODE 3	0	50kg	50kg	50kg	5t	250kg (c)	5t	5t	5t	*	*	50kg
MODE 4	250kg	5t	5t	5t	16t	16t	16t	16t	16t	*	*	500kg

* Any quantity.

(a) Conveyed under Regulation 4(1)(b) of the 1983 Regulations.

(b) Up to 1kg of detonators may be conveyed together with up to 50kg of blasting explosives if both are in separate and suitable containers (Regulation 8).

(c) Five tonnes where the only explosives carried are a substance or substances designated as 'low risk' in 'List of Authorised Explosives' or 'List of Classifications of Explosives' both being lists issued by the Health and Safety Executive or in any of the various lists of classifications for military explosives issued by the Ministry of Defence, all the foregoing as revised or re-issued from time to time.

SCHEDULE 3

Regulation 13(1)

PLACARDING UNDER MODE 3 OR 4

Hazard warning panels

1. At all times when explosives are conveyed under Mode 3 or 4, three hazard warning panels shall be displayed, one at the rear and one at each side of the motor vehicle, trailer or semi-trailer in which the explosives are actually carried; except that if the explosives are in a freight container then one shall be displayed at the rear and one at each side of the freight container.

2. Each hazard warning panel shall -

(a) be weather resistant and durably marked so as to comply with the requirements of paragraphs 3 to 11;

(b) be either rigid or fixed so as to become rigid;

(c) be marked on or securely attached to the vehicle or the freight container in a substantially vertical plane and if the means of attachment is by a frame that frame shall carry no other hazard warning panel;

(d) have its lower edge at least 1 metre from the ground or if that is not reasonably practicable as high as is reasonably practicable.

3. The forward edge of each of the 2 side panels shall be as close as is reasonably practicable to the front of the load carrying part of the vehicle or the freight container, as the case may be.

4. As far as is reasonably practicable at all times when explosives are being conveyed the hazard warning panels shall be kept clean and free from obstruction.

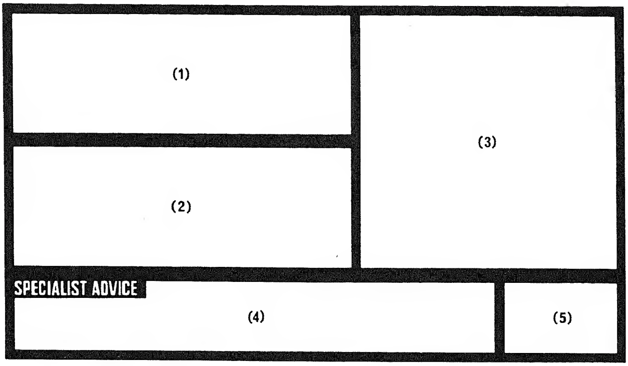
5. When conveyance ceases the hazard warning panels shall be either -

(a) completely covered or completely removed; or

(b) partly covered or partly removed so as to leave visible only the information specified in paragraph 8(d) and (e).

Form of hazard warning panels

6. Each hazard warning panel shall be in the form of the following diagram.



7. Any reference in this Schedule to a space number is a reference to the space so numbered in the diagram in paragraph 6.

Information to be shown on hazard warning panels

8. The following information and no other shall be shown on each hazard warning panel -

(a) space (1) shall be left blank;

(b) in space (2), if explosives of more than one Division or Compatibility Group are being conveyed, the word "Multi-load", otherwise it shall be left blank;

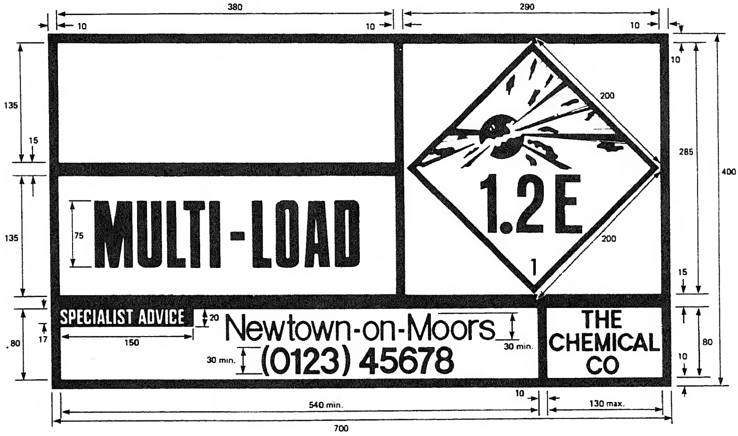
(c) in space (3) the hazard warning sign appropriate for the explosives being conveyed as described in paragraph 11;

(d) in space (4) the telephone number of the place where specialist advice on the load can be obtained throughout the conveyance;

(e) in space (5), the name of the manufacturer or owner of the explosive, his house symbol or both may be shown, otherwise it shall be left blank.

Specifications for hazard warning panels

9. The specifications shall be as set out in the diagram below with dimensions in millimetres; larger measurements may be used, but in that case they shall be kept in the same proportions to each other except that the lettering and figures may remain as shown in the diagram, or be of intermediate size.



Colours of hazard warning panels

10. The colours of hazard warning panels shall be as follows -

(a) the background colour of each hazard warning panel shall be orange;

(b) the border, internal dividing lines, and figures shall be in black;

(c) the words "specialist advice" in space (4) shall be in orange letters on a black background, all other letters on the panel shall be in black;

(d) the space for the hazard warning sign on each hazard warning panel shall be white.

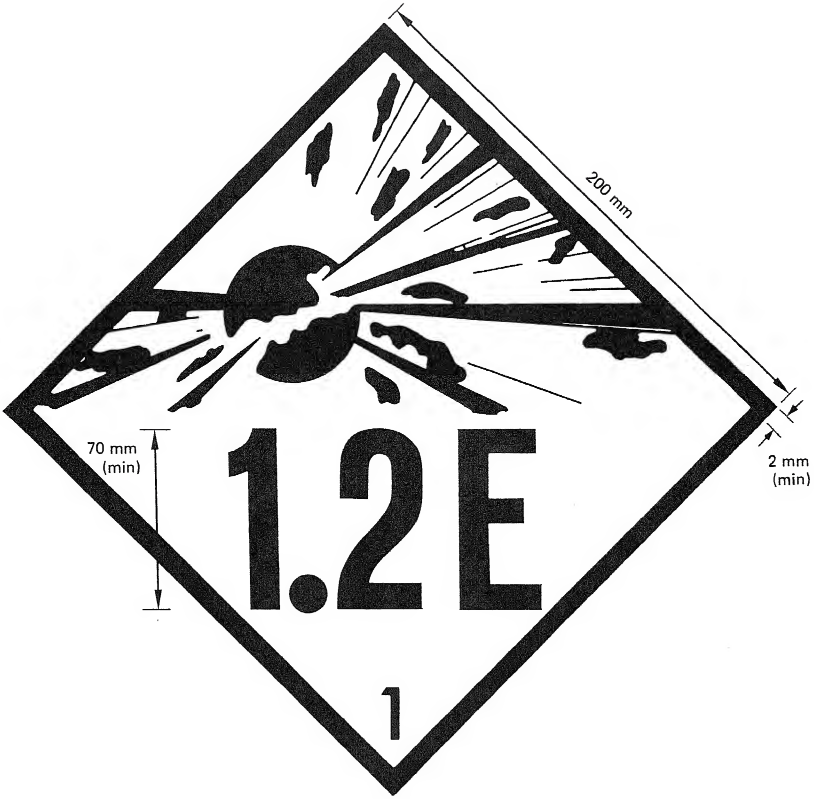
Hazard warning signs

11.- (1) The hazard warning sign to be used in space (3) of the hazard warning panel shall be a square set with its sides at an angle of 45° to the vertical.

(2) In the case of explosives in Division 1.1, 1.2 or 1.3, the hazard warning sign shall -

(a) be in the form of the following diagram (the Division number "1.2" and the Compatibility Group letter "E" are only examples);

(b) comply with the measurements in the diagram except that larger measurements may be used in which case the measurements shall be increased proportionally;



(c) have a pictograph of a bomb blast filling most of its upper half;

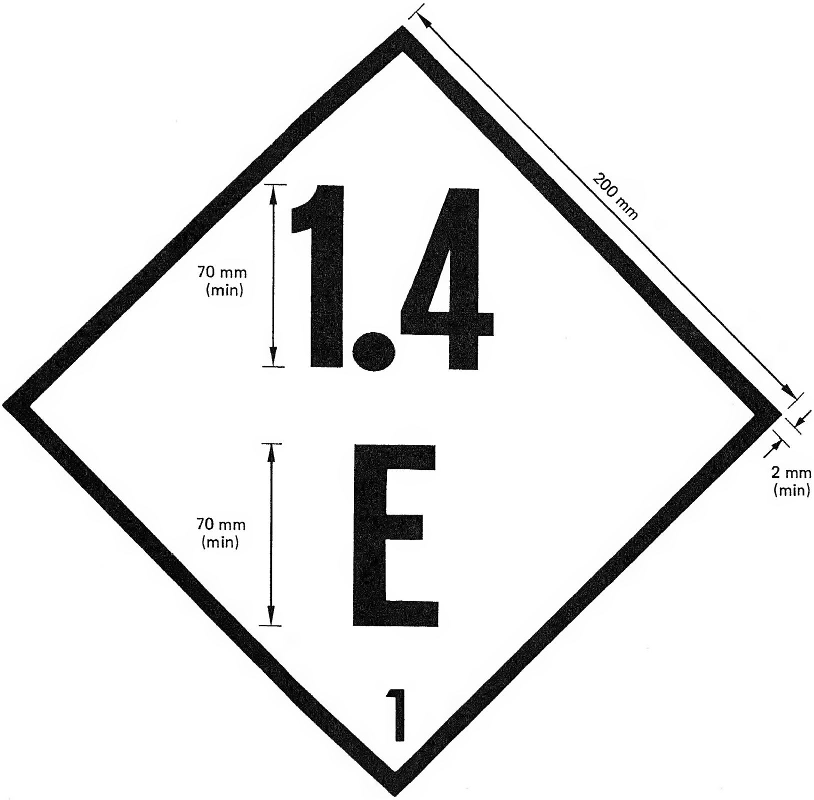
(d) have the Division number and Compatibility Group letter appropriate to the explosives being conveyed written in its lower half; and

(e) have the class number "1" written in its bottom corner below the Division number and Compatibility Group letter.

(3) In the case of explosives in Division 1.4 or 1.5, the hazard warning sign shall -

(a) be in the form of the following diagram (the Division number "1.4" and the Compatibility Group letter "E" are only examples);

(b) comply with the measurements in the diagram except that larger measurements may be used in which case the measurements shall be increased proportionally;



(c) have the Division number appropriate to the explosives being conveyed written in its upper half;

(d) have the Compatibility Group letter appropriate to the explosives being conveyed written in its lower half; and

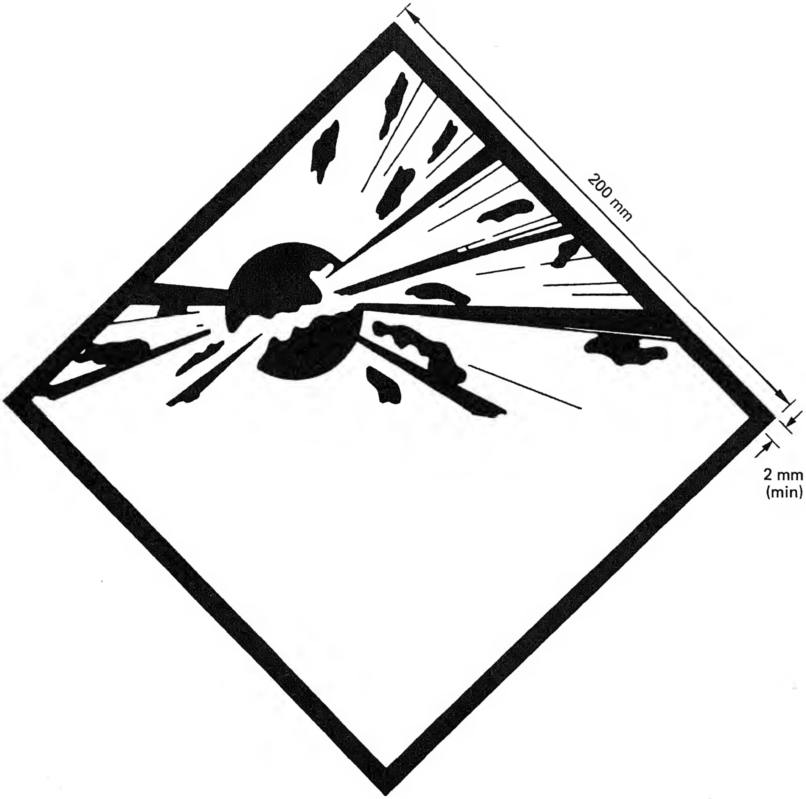
(e) have the class number "1" written in its bottom corner below the Compatibility Group letter.

(4) If explosives of more than one Division or Compatibility Group are conveyed together, the Division number written shall be that of the explosive in the lowest Division amongst them and the Compatibility Group letter shall be that of the most appropriate Compatibility Group (whether or not an explosive in that Compatibility Group is conveyed) taking into account the characteristics of the load as a whole.

(5) In the case of explosives which are conveyed under Regulation 4(1)(b) of the 1983 Regulations solely in connection with an application for their classification, the hazard warning sign shall -

(a) be in the form of the following diagram; and

(b) comply with the measurements in the diagram except that larger measurements may be used in which case the measurements shall be increased proportionally.



(6) The background colour of the hazard warning sign shall be orange and pictographs, numbers, letters and lines thereon shall be in black.

SCHEDULE 4

LIST OF REVOKED INSTRUMENTS

The Orders of Secretary of State Nos. 11(a), 11A(b), 11C(c), 11D(d);

The Conveyance of Explosives Byelaws 1951;(e)

The Conveyance of Explosives Byelaws 1958;(f)

The Conveyance by Road of Military Explosives Regulations 1977(g)

(a) S.R. and O. 1924/1129; amended by S.R. and O. 1939/1789, 1943/1252, S.I. 1951/869, 1958/230, 1984/510.

(b) S.R. and O. 1939/1789.

(c) S.R. and O. 1943/1252.

(d) S.R. and O. 1944/139.

(e) S.I. 1951/869.

(f) S.I. 1958/230.

(g) S.I. 1977/888.

PART 3

APPROVED CODE OF PRACTICE FOR THE CONVEYANCE OF EXPLOSIVES BY ROAD REGULATIONS 198-

PREFACE

[This Approved Code of Practice has been prepared following joint discussions between representatives of the Confederation of British Industry, the Trades Union Congress, the Local Authorities, Government Departments and the Health and Safety Executive.]

[The Code has been approved by the Health and Safety Commission, with the consent of the Secretary of State for Transport, under Section 16(1) of the Health and Safety at Work etc Act 1974 for the purpose of providing practical guidance with respect to the provisions of The Conveyance of Explosives by Road Regulations ("the Regulations").]

Although failure to comply with any provision of this Code is not in itself an offence, that failure may be used in criminal proceedings as evidence that a person has contravened a regulation to which the provision relates. In such a case however it will be open to the person charged to satisfy the court that he has discharged his duty or complied with the regulation in some other way.

Words and expressions which are defined in the Health and Safety at Work etc Act 1974 and the Regulations have the same meaning in this Code unless the context requires otherwise.

This Code gives practical guidance on the methods of compliance with the Regulations covering constructional and operational matters, including precautions against fire or explosions, and supervision of vehicles.

Each section of this Code gives practical guidance on a specific regulation, the number and content of which appear at the head of each section.

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DEFINITION OF "QUANTITY OF EXPLOSIVE"

Regulation 2(3)

> " (3) Any reference in these Regulations to the quantity of any explosive shall be construed as a reference to the net mass of explosive substance therein contained."

---

1. If, exceptionally, the net mass of explosive substance is not known to the carrier, he should act according to the gross mass of the item(s).

Note: for practical purposes "mass" may be regarded as the same as weight.

MODES OF CONVEYANCE

Regulation 5(1) and (2)

> "5.- (1) Subject to Regulation 3(2), no person shall use any vehicle in the conveyance of explosives by road except under one of the modes of transport listed in Schedule 1.
>
> (2) A person may choose to use a vehicle under a lower numbered mode than that under which it could be used."

---

2. The regulations provide for explosives to be conveyed under one of four "modes". Each mode corresponds to a specified combination of controls over the type of vehicle, the operating conditions, the types of explosives and the maximum permitted quantity on the vehicle. Some types of vehicle can be used under more than one mode, in which case the type and quantity of explosives to be conveyed depend upon the operating conditions or vice versa. The Regulations allow a larger quantity when the explosive is a safer type or when there are safety precautions additional to the basic ones.

3. The following list gives the types of vehicle which are typical of each Mode:-

Mode 1 - bus, taxi, or hired coach;

Mode 2 - motor car;

Mode 3 - ordinary (i.e. non-specialised) rigid, closed or sheeted goods vehicle; ordinary lorry with trailer; articulated lorry with semi-trailer;

Mode 4 - Vehicle specially designed and constructed for the carriage of explosives; vehicle carrying a freight container or portable magazine.

4. A goods vehicle may be able to comply with the provisions of more than one mode. In that case the operator must decide, before commencing conveyance, under which mode a particular journey is to be made. If he decides, for example, to use a freight container under Mode 3 then he must comply with the corresponding provisions; the limit would be 5 t net mass of explosive in articles classified 1.1D, not 16 t. On another occasion the operator may wish to convey more than 5 t of such ammunition in a freight container; in that case the journey must be conducted under Mode 4 and the additional safety precautions must be taken. It is permissible for a goods vehicle to be used under Mode 2 if the limit of 50 kg explosives classified 1.1D etc is observed; however such conveyance would be unusual and probably uneconomic unless the goods vehicle were a small van.

MIXED LOADING OF COMPATIBILITY GROUPS

Regulation 7(c)

> **"7. The operator of a vehicle used in the conveyance of explosives under Mode 2, 3 or 4 shall ensure that -**
>
> **(c) explosives in different Compatibility Groups are not conveyed together unless all reasonably practicable measures have been taken to ensure that they may be so conveyed without significantly increasing either the probability of an accident or, for a given quantity, the magnitude of the effects of such an accident;"**

---

5. The Regulation is based on the definition of "compatibility" in the UN Recommendations. The concept is not confined to chemical compatibility in the usual sense. The UN has formulated 12 compatibility groups in order to permit an appropriate degree of discrimination for each mode of transport. Sometimes the products in one compatibility group are considered compatible with those of another group but these considerations vary from one mode of transport to another and from country to country.

6. It is universally recognised that goods in Compatibility Group S may be conveyed in the same vehicle, freight container or compartment as goods of any compatibility group other than Compatibility Groups A and L. In Great Britain, it is considered that goods of Compatibility Groups H and J should not be conveyed together nor with goods of any other compatibility group except "S". Goods of Compatibility Groups K and L are permitted only under an exemption by HSE or Secretary of State and there would be no question of mixed stowage of these.

7. Many authorities consider that articles of Compatibility Groups C, D and E can be safely conveyed in the same load-carrying compartment, portable magazine or freight container, provided the method of stowage is suitable. It is also considered that substances of Compatibility Groups C and D may be safely conveyed together provided adequate account is taken of the possibility of chemical interaction between the particular substances present, in the event of leakage from packaging. Substances of Compatibility Group C or D should not be conveyed with articles of Compatibility Group C, D or E unless adequate precautions are taken to prevent harmful interactions such as impact or friction by exposed metal. It is the responsibility of the operator to ensure that all reasonably practicable measures are taken to prevent harmful interactions when goods of these Compatibility Groups are conveyed together.

8. Goods of one Compatibility Group can sometimes be over-packed in a suitable container which would ensure that, in the event of explosion or burning of the contents, the explosion or fire is moderated by that container so that any explosives of a different Compatibility Group, outside the container but within the same load-carrying compartment, portable magazine or freight container, do not explode in mass or burn in mass. (Superficial damage to packaging is not considered significant). This is usually practicable only for relatively small quantities of explosive articles or substances. It is the responsibility of the operator to ensure that the container is suitable for this purpose. He may ensure this by requiring a certificate from the consignor to show that the prototype of a particular container has been type tested for the proposed contents and mixed stowage.

9. These considerations are summarised in the table at Appendix 1. In the case of goods considered to be incompatible for conveyance by road, the necessary segregation may be achieved by using separate vehicles, or separate portable magazines or freight containers.

CONVEYANCE WITH OTHER ARTICLES OR SUBSTANCES

Regulation 7(e)

> **"7 The operator of a vehicle used in the conveyance of explosives under Modes 2, 3 or 4 shall ensure that -**
>
> **(e) explosives are not conveyed together with any other dangerous articles or dangerous substances or any other article or substance which is liable to cause or communicate fire or explosion ...."**

---

10. No loose equipment, dunnage or other articles should be permitted in the load-carrying compartment (for example cans of petrol, corrosive substances, jacks, loose tools or exposed vehicle batteries). Any fire extinguisher shall be properly secured.

USE OF TRAILER OR SEMI-TRAILER

Regulation 10(2)(b)

"10(2)(b) ..... a trailer or semi-trailer shall -

> (ii) be constructed so as to be adequately braked or restrained if it becomes detached from the motor vehicle towing it;"

---

11. Any trailer used should have _either_ brakes which are automatically applied when the trailer is accidentally detached from the towing vehicle, _or_ over-run brakes plus a safety chain connecting the trailer to the towing vehicle.

CONSTRUCTIONAL FEATURES FOR PREVENTION OF FIRE OR INITIATION OF LOAD

Regulation 11(a) and (b)

"11 The operator of a vehicle used in the conveyance of explosives under Mode 4 shall ensure that the vehicle and any freight container used in such conveyance are so constructed, designed and positioned, as the case may be, that, so far as is reasonably practicable -

_(a)_ there is no risk of ignition or initiation of the load;

_(b)_ fire cannot start on the vehicle or, except where only small arms ammunition and no other explosive is carried, spread to the load either from the vehicle or from elsewhere;"

---

12. Guidance on the above regulation is given below under the following four headings:-

- screen or gap to prevent spread of fire (para 16, 17);
- protection from hazard from the fuel or power system (para 18-22);
- protection from hazard from the electrical system (para 23-27);
- lining of the load carrying compartment (para 28-29).

Where recommended measures differ according to the vehicle's means of propulsion, the above paragraphs have been arranged under appropriate headings, as shown in the contents list of this Code of Practice.

13. For vehicles carrying a freight container these recommendations should be complied with when the freight container is mounted on the vehicle and is regarded as the vehicle's load-carrying compartment. Where a trailer is used, these recommendations should be observed where appropriate for the trailer and/or its towing vehicle.

14. In this Code of Practice the term "fire resisting" means that the part concerned is so constructed that:-

- the material used has a surface spread of flame characteristic not inferior to that of Class 1 in BS 476: Part 7: 1971, and
- the construction of the part concerned will not collapse or permit the penetration of flame for a period of 15 minutes when tested in accordance with the provisions of BS 476: Part 8: 1972: "Test methods and criteria for the fire resistance of elements of building construction."

15. The requirement that the vehicle should be so constructed as to prevent spread of fire to the cargo of explosives does not necessarily apply where the entire load of explosives is small arms ammunition. Such products are identified in List of Classifications of Explosives and Ministry of Defence Lists.

SCREEN OR GAP TO PREVENT SPREAD OF FIRE

16. Oil-driven vehicles

Either

(a) a fire-resisting screen should be provided to act as a fire shield and separate the engine, exhaust, generator, switches, cab etc from the load-carrying part of the vehicle; the shield should be carried down to within 400mm of the ground and there should be a clear space of at least 150mm between the shield and the load-carrying part of the vehicle; and the whole of the exhaust pipe should be carried in front of the screen; or

(b) the back of the cab should be of fire-resisting construction and a clear space of not less than 150mm should be provided between the cab and the nearest point of the load-carrying part of the vehicle; moreover in any case where the engine extends beyond the rear of the cab the engine should be efficiently screened from the load-carrying part of the vehicle by a fire-resisting shield and a space of not less than 150mm should be provided between the shield and the nearest point of the load-carrying part of the vehicle; the exhaust pipe and air intake of the engine should be so placed, directed or protected as to avoid any danger to the load; or

(c) the floor and walls of the load-carrying compartment of the vehicle, including any door in such floor or wall, should be of fire-resisting construction; or

(d) the vehicle should be a tractor unit [approved by HSE in accordance with the second Schedule to the Dangerous Substances (Conveyance by Road in Road Tankers and Tank Containers) Regulations 1981/ designed and constructed in accordance with the Approved Code of Practice for Flammable Liquid Tankers]*

The floorboards and side doors of the cab, if made of wood, should be treated with a flame retardant approved by HSE.

17. Electrically-driven vehicles

Either

(a) a fire resisting screen should be provided to act as a fire shield and separate the battery, control gear, power cables and motor from the load-carrying part of the vehicle; the shield should be carried down to within 400mm of the ground and there should be a clear space of at least 150mm between the shield and the load-carrying part of the vehicle; or

(b) the back of the cab should be of fire-resisting construction and a clear space of not less than 150mm should be provided between the cab and the nearest point of the load-carrying part of the vehicle; moreover in any case where the battery, motor or associated equipment extend beyond the rear of the cab, these parts should be efficiently screened from the load-carrying part of the vehicle by a fire-resisting shield and a space of not less than 150mm should be provided between the shield and the nearest point of the load-carrying part of the vehicle; or

(c) the floor and walls of the load-carrying compartment of the vehicle, including any door in such floor or wall, should be of fire-resisting construction.

The floorboards and side doors of the cab, if made of wood, should be treated with a flame retardant approved by HSE.

PROTECTION FROM HAZARD FROM THE FUEL OR POWER SYSTEM

Oil-driven vehicles

18. A quick-action cut-off operable from ground level must be fitted to the fuel feed pipe in an accessible position and clearly indicated. The cut-off should be fitted as close to the fuel tank as possible, in order to isolate it, and should be operable from outside the cab.

19. The fuel tank should be so positioned that any leakage from it falls directly onto the road surface when the vehicle is stationary.

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* ACoP expected to be published before these proposals.

Electrically-driven vehicles

20. The battery or batteries and their installation in the vehicle should be of a kind approved by HSE.* Precautions should be taken to prevent the accumulation of flammable gases both during battery charging and at other times.

21. All electrical conductors on the vehicle should be of adequate size and current rating; they should be heavily insulated and protected against mechanical damage. The motor control gear and all the electrical equipment on the vehicle should be suitable for the maximum power demanded by each apparatus when in use and should be otherwise so constructed, installed and protected as to prevent danger. Each circuit should have its own current overload protection.

22. A quick-action cut-off switch should be fitted to the power supply in an accessible position and clearly indicated. The cut-off should be fitted as close to the battery as possible, in order to isolate it, and should be operable from both inside and outside the cab.

PROTECTION FROM HAZARD FROM ELECTRICAL SYSTEM

23. These recommendations apply to vehicles with a fixed body**.

24. All lamps fixed anywhere on the vehicle, and all portable lamps carried on the vehicle, should be electric.

25. Except where the floor and walls of the load-carrying compartment are of fire-resisting construction (see para 16(c)), all electrical wiring to the rear of the fire-resisting screen (or back of the cab) should be either laid in an external conduit with all live parts covered, or heavily insulated as would be approved by HSE*** under the second Schedule to the Dangerous Substances (Conveyance by Road in Road Tankers and Tank Containers) Regulations 1981, and should have its own current overload protection.

26. In all cases where the load-carrying compartment has interior lighting, the wiring should be either laid in an external conduit, or heavily insulated as in paragraph 25 above; the switch should be external; the lamp(s) should be totally enclosed so that all live parts are covered; and the installation should have its own current overload protection. The interior light installation should be dust-tight (as defined in this para) or, in the case of Compatibility Group J, flameproof (as defined in this para). "Dust-tight" here means that the interior of the enclosure remains completely free from dust when tested in accordance with the test method in BS 5490:1979 (NB flameproof with gaps properly sealed would be acceptable). "Flameproof" here means that the installation is protected in such a way that the parts which could ignite an explosive atmosphere are placed in an enclosure which can withstand the pressure developed during an internal explosion of an explosive mixture, and thus prevents the transmission of the explosion to the explosive atmosphere surrounding the enclosure [BS 5501].

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* "Approval" is intended to be only a stop-gap procedure pending the development of a British Standard or other detailed specification for equipment and circumstances not envisaged in the Explosive Atmospheres Directive.

** "Fixed body" means a load-carrying compartment fixed as a permanent feature of the vehicle.

*** See footnote on the preceding page relating to the 1981 Regulations.

27. An electrical cut-off switch should be fitted to cut off power from all electrical circuits on the vehicle other than the tachograph.

LINING OF LOAD-CARRYING COMPARTMENT

28. These recommendations apply to vehicles with a fixed body. Equivalent standards applying to freight containers are specified in Special Packing Authority 1376 (for explosives of Division 1.1) and Special Packing Authority 1374 (for explosives of Division 1.2, 1.3 and 1.4).

29. For explosive articles, there are no special recommendations for lining of the load-carrying compartment of the vehicle. Where explosive substances are carried, the interior of the compartment (including its door or doors) should be so constructed as to minimise the risk of frictional or electrostatic generation of sparks, as follows:-

(a) For a steel compartment:

a suitable lining should be fitted, constructed either of wood treated with a flame retardant approved by HSE, or of such other material as may be so approved. The lining should be fitted in such a way that no iron or steel is exposed within the load-carrying compartment.

(b) For a non-ferrous metal compartment or a glass-reinforced plastic (GRP) compartment:

no separate lining is required, provided that there is no exposed iron or steel within the load-carrying compartment. However, if there is any exposed iron or steel, a lining constructed as in (a) should be fitted either as a complete lining or so as to cover the exposed iron or steel parts. Consideration should be given to the use of anti-static materials.

CONSTRUCTIONAL FEATURES FOR PREVENTION OF UNAUTHORISED ACCESS

Regulation 11(c)

"11 - The operator of a vehicle used in the conveyance of explosives under Mode 4 shall ensure that the vehicle and any freight container used in such conveyance are so constructed, designed and positioned, as the case may be, that, so far as is reasonably practicable -

(c) precautions can be taken to stop any unauthorised access to, or removal of all or part of, the load;"

---

30. All doors and emergency access ports in the load-carrying compartment or freight container should fit closely and should be capable of being locked. There should be no openings in the load-carrying compartment other than the doors, or emergency access port if fitted.

PROVISION OF ACCESS TO LOAD IN EMERGENCY

Regulation 11(d)

> "11 - The operator of a vehicle used in the conveyance of explosives under Mode 4 shall ensure that the vehicle and any freight container used in such conveyance are so constructed, designed and positioned, as the case may be, that, so far as is reasonably practicable -
>
> (d) in the event of overturning access can still be had to the load."

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31. In a fixed body vehicle doors may be fitted in the side or the end of the vehicle body, but if side doors are fitted a second means of access to the load should be provided in another face of the vehicle body. This second access may be either another door or an access port for use in emergency.

OPERATIONAL MEASURES TO ENSURE SECURITY AND SAFETY OF LOAD

Regulation 15(1)

> "15 - (1) The operator of a vehicle used in the conveyance of explosives under Mode 2, 3 or 4 and all other persons engaged in the conveyance or otherwise responsible for the safety or security of the explosives shall perform their allotted functions properly and carefully and shall take all reasonably practicable measures to prevent accidents, to minimise the harmful effects of any accident which may occur and to prevent unauthorised access to, or removal of, all or part of the load."

Security Measures

32. The load-carrying compartment or freight container on a vehicle carrying explosives should be locked during conveyance except during loading or unloading or when access to the explosives is necessary for some other valid purpose, eg to check the condition of the load. Where this is not possible (for example, where the vehicle is a sheeted vehicle) the explosives should be kept secure: -

(a) by being kept in a substantially constructed locked container, which, if the full container weighs less than 50 kg, should be securely fastened to the structure of the vehicle; or

(b) where there is no separate load-carrying compartment, by the vehicle as a whole being locked; or

(c) if each item or unit load weighs 50 kg or more, by relying on its own weight; or

(d) by an escort or attendant for the vehicle throughout its journey who is so positioned as to detect any attempt at theft.

33. The guidance in paragraph 32 does not apply:-

(a) to any vehicle conveying explosives wholly within the confines of an explosives factory or magazine area, whether or not that vehicle will eventually travel on a road with the load;

(b) to conveyance from an explosives magazine, store or registered premises to the site of use, or between these buildings where explosives are stored; provided that such conveyance does not take place on a public road, or in any area to which the public have access when conveyance is taking place;

(c) where the entire load is small arms ammunition or retail (shop goods) fireworks.

Safety measures

34. For Mode 2, 3 or 4, except where the only explosives carried are small arms ammunition the following operational measures to ensure the safety of the load should be taken:

(a) the engine of the vehicle should not be run while explosives are being loaded into or unloaded from the vehicle, except where it is necessary to run the engine in order to provide power for a crane or other equipment integral with the vehicle which is needed for loading or unloading;

(b) no fuel should be:-

(i) carried in or on the vehicle (unless in the fuel tank) during the conveyance of the explosives in that vehicle, except as permitted for Mode 2 by Regulation 7(d) (ii); or

(ii) put into the fuel tank of the vehicle while the explosives are being loaded into or unloaded from that vehicle.

Where a trailer is used these operating precautions should be observed where appropriate in respect of both the trailer and its towing vehicle.

35. To reduce the risk of an explosion on one vehicle being propagated to other vehicles in a convoy of explosives vehicles, drivers should try to avoid driving in close proximity (i.e. less than 200m) to other vehicles carrying explosives.

36. The driver of the vehicle should, within 30 minutes of starting his journey and thereafter at least once in every 2-hour period after resuming the journey, stop the vehicle at some place neither in nor near to a built up area and carefully examine it and the load of explosives carried in it and if on any such examination it appears that:-

(a) the vehicle is not in good and efficient working order; or

(b) the load is not safely stowed and secured in the vehicle; or

(c) excessive heat has been generated by movement of the load, friction of the tyres against the chassis, deflation of the tyres, faulty adjustment of the brakes, or by any other cause,

the driver should remedy the defect or the faulty stowage or adjustment of the load, as the case may be, or cause it to be remedied, before he continues his journey.

37. For Mode 4 operators of vehicles should take any extra precautions they consider to be practicable to prevent any accident which might lead to an explosion. In assessing the degree of practicability, vehicle operators should give due weight to the large quantity of explosives permitted and the consequential effects in the event of an explosion.

PROTECTION OF LOAD FROM ELECTROMAGNETIC RADIATION

Regulation 15(2)(c)

> **"15(2)(c) ...... electro-explosive articles shall be stowed in accordance with any directions from the consignor concerning the prevention of accidental initiation;"**

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38. Some articles of Class 1 contain initiation systems which are sensitive to electro-magnetic radiation from external sources such as radio or radar transmitters. Generally it is the responsibility of the consignor to provide any necessary protection against accidental initiation during conveyance, by means of shielding material etc in the packaging. There may be occasions however when this is not reasonably practicable in which case the consignor will provide instructions on the method of stowage in a vehicle and the precautions to be observed during loading and unloading.

39. The operator and all other persons engaged in the conveyance of such articles should observe any instructions from the consignor in this respect. The instructions may be expected to require that the loading or unloading of such articles (except those in Division 1.4) should not take place within 50 metres of any radio or radar transmitter, unless it can be established that the power output does not exceed 25 Watts and no part of the aerial system is within 2 metres of the articles. Paragraphs 7.7 and 7.8 of BS 4992: 1974 are relevant.

STOWAGE OF LOAD

Regulation 15(2)(d)

> **"15(2)(d) ...... explosives shall be stowed so as to prevent unnecessary movement and to enable adequate access to be obtained in an emergency;"**

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40. For Mode 3 or 4, the following principles should be adhered to when a vehicle is loaded with explosives (including any loading or unloading at intermediate stops during a journey):-

(a) The height of the load should be minimised and should never be great enough to impair the stability of the vehicle;

(b) The load should be adequately restrained against movement;

(c) The load should, as far as possible, be evenly distributed to avoid the imposition of concentrated loads on any part of the floor.

41. The system used for restraining the load should prevent unnecessary movement of the load in the following acceleration:-

Laterally : ± 0.5g

Longitudinally : (+ 0.5g
(- 1.0g

(An acceleration of -1.0 "g" implies a braking force equal to the total weight of the load the vehicle is carrying). The restraint system should be designed, constructed and maintained to prevent unnecessary movement of any article or package while also avoiding crushing or any other damage to any articles or packages in the conditions specified.

42. Where more than one freight container is carried on the same vehicle, the containers should be placed on the vehicle in such a way that the doors on each container can be opened in case of need.

CONSTANT ATTENDANCE OF LOAD AND STOPS IN SECURE PREMISES

Regulation 15(2)(g)

"15(2)(g) where the type and quantity of explosives fall within Regulation 14(1)(a) to (e) a responsible person shall constantly be in attendance throughout the conveyance except -

(i) during stops in secure premises,

(ii)under Mode 2, where the vehicle is on the site where some or all of the explosives are to be used that day and adequate security precautions are taken;"

---

43. "In attendance" means that the person should be on or about the vehicle.

44. "Secure Premises" should have a standard of security equivalent to that recommended for a licensed explosives store in Home Office Circular No. 113/1972 (as revised or reissued from time to time).

45. During conveyance, a situation may arise (eg road accident or mechanical failure) which might require the assistance or attention of the emergency services. Because of the requirement to carry an attendant for most classes of explosives while the vehicle is in motion (Regulation 16(a)) there should normally be no difficulty in ensuring that the vehicle is constantly attended while any necessary assistance is summoned. If, exceptionally, the driver or person in charge of the vehicle should be alone, he should try to seek the help of other persons in the vicinity and request them to call the relevant emergency service. His first duty in such circumstances should be to stay with the vehicle, so that he may protect the security of the load, warn other persons to keep clear of any hazard and to be on hand when the emergency services arrive.

46. A vehicle may be used under Mode 2 for conveyance of explosives to a site of use; after arrival at the site, the vehicle may be used for temporary keeping of the explosives pending their use on the site on the same day. If possible, explosives stored in these circumstances should be constantly attended by the driver, operator or some other reliable person. If no suitable person is available, the vehicle may be left unattended provided that stringent precautions have been taken to prevent unauthorised access to the explosives as follows:

(a) the vehicle should be effectively immobilised by means additional to that provided by the vehicle manufacturer;

(b) the explosives should only be kept in a totally enclosed load-carrying compartment of the vehicle which is secured by an effective lock additional to that provided by the vehicle manufacturer;

(c) the explosives should be kept in a substantial locked steel container which has been designed to prevent unauthorised access and has been welded, bolted or otherwise fixed so as to be an integral part of the vehicle; and

(d) the vehicle should be visited by the driver or operator and examined for interference at intervals not exceeding 30 minutes.

PROHIBITION OF SMOKING

Regulation 15(2)(h)

> **"15(2)(h) ...... no person who is engaged in loading or unloading, or is in the vicinity of the explosives or vehicle, shall smoke while loading or unloading is taking place and, unless the only explosives being conveyed are in Division 1.4, Compatibility Group S when suitable precautions to prevent accidents shall be taken, no person who is engaged in the conveyance shall at any other time smoke while he is on, in or in the vicinity of the vehicle;"**

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47. During loading and unloading, no person involved in the operation should smoke within 10 metres of the explosives vehicle or any explosives; and loading and unloading should be required to cease if any other person is smoking within 10 metres.

INTOXICATED PERSONS

Regulation 15(2)(j)

> "15(2)(j) ...... no intoxicated person shall be allowed to be on, in or in attendance on, a vehicle at any time or to approach or remain near the vehicle or the explosives during loading or unloading;"

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48. "Intoxicated" should be interpreted as under the influence of alcohol, or any drug other than those medicines which do not adversely affect physical and mental well-being.

FIRE-FIGHTING EQUIPMENT

Regulation 15(2)(k)

> "15(2)(k) ...... the operator shall ensure that where more than 2 kilograms of explosives are carried suitable fire-fighting equipment is carried on the vehicle or if it has its own escort vehicle, on the escort vehicle;"

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49. Fire-fighting equipment is not essential if the vehicle is carrying not more than 2 kg of explosives. If more than 2 kg but not more than 50 kg explosives of Division 1.1, 1.2 or 1.3 are conveyed on a vehicle, the operator should provide one or more portable fire extinguishers which, taken together, are rated at least 13B in accordance with British Standard 5423. These are intended to provide "first aid" action in the event of a typical fire in the engine or electrical system of the vehicle order to prevent its spreading to the explosives. For example one BCF extinguisher of about 1½ kg minimum should be carried on the vehicle, in or about the cab. If an aggregate quantity exceeding 50 kg explosives of Division 1.1, 1.2 or 1.3 is conveyed on a vehicle, the operator should provide at least two 9 litre water-gas first aid fire appliances, each rated 13A in BS 5423, to deal with a fire in or about the load-carrying compartment or to contain a tyre fire (such extinguishers are unlikely to extinguish a tyre fire). Extinguishers are not essential for explosives of Division 1.4 in general but consideration should be given to carrying extinguishers on dedicated vehicles carrying large

quantities of Division 1.4 especially when the itinerary is likely to include densely populated areas.

50. Under Mode 3 or 4 the extinguishers should be carried in or about the cab or, if the vehicle has its own escort vehicle, on the escort vehicle. The extinguishers should be regularly maintained in efficient working order and in a good state of repair. They should be located in an accessible position and any fitted outside the vehicle should be protected from the weather.

51. Where a trailer is used to carry the explosives, the towing vehicle should comply with the above requirements on fire-fighting equipment.

SELECTION OF ROUTE

Regulation 16(b)

"16(b) ...... the driver shall, so far as is reasonably practicable, follow a route away from towns and villages and avoid stopping or delay;"

---

52. Before each journey, the operator of the vehicle should decide the route (or a number of possible routes) to be followed, avoiding built-up areas as far as possible; and the driver should follow the specified route (or one of the alternatives specified) whenever practicable.

53. Contingency plans should be made to deal with foreseeable events which might create a dilemma for the driver. Examples are severe weather conditions necessitating a diversion from the preferred routes or an unscheduled overnight stop; delay through congested traffic or breakdown which might prevent completion of the journey within the legally permitted hours of driving; and illness during the journey. The operator is entitled to expect the driver to use his initiative and judgement to some extent but he should not, through lack of proper planning, place the driver in the position whereby he cannot comply with the law.

ROUTES FOR LARGE LOADS

Regulation 16(c)

"16(c) ... under Mode 4 when the conveyance is of more than 5 tonnes of explosives in Division 1.1, Compatibility Group C or D, the driver shall follow a route agreed with the Chief Officers of Police of the relevant police districts;"

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54. It is not practical to agree every journey with the police. The intention is that the operator should plan each itinerary on the basis of predetermined route systems which take cognizance of any local government

schemes for preferred or restricted routes. Such systems should be notified to the police and modified in the light of any advice received in response. Once agreed, there should be no need to involve the police except to deviate from the system of determined route options.

55. In the interest of good security, any maps or lists of predetermined routes should be circulated only to those who need to know of them and the actual routes selected from available options should be varied from time to time. If on occasion it is necessary to involve the police, because of expected severe weather or the need to use routes not previously agreed, the operator should notify the Chief Officer of Police (for example by telex) if possible 24 hours before the journey is to commence, and he should adopt any recommendations from the police. In exceptional circumstances the police may wish to escort the vehicle through a particular police district and the operator should comply accordingly.

REPAIRS TO VEHICLE

Regulation 16(e)

> "16(e) ..... no person shall allow the vehicle to be repaired except on the instructions of a competent person."

56. No hot work should be carried out whilst explosives are still on the vehicle. No vehicle should enter a workshop with explosives still on board. No repairs should be carried out on a vehicle whilst still on the road except those necessary to render the vehicle mobile.

PROCEDURE IN THE EVENT OF AN ACCIDENT

Regulation 19(1) and (2)

> "19.-(1) Under Mode 2, 3 or 4, persons engaged in the conveyance or otherwise responsible for the security of the explosives shall in the event of -
>
> (a) spillage of the explosives; or
>
> (b) damage to the explosives or their packaging such as to constitute a serious risk to safety;
>
> ensure that -
>
> (c) a competent person is informed and the matter dealt with as he directs; and

(d) precautions are taken for the security of the explosives and the safety of persons likely to be affected by ignition or initiation of the explosives.

(2) The competent person referred to in paragraph (1)(c) shall ensure, so far as is reasonably practicable, that any spillage, damaged explosives or explosives in damaged packaging are dealt with safely and securely."

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57. If, at any time during conveyance, a vehicle carrying explosives is involved in any road accident, the driver of the vehicle or the person (if any) in attendance on the vehicle should examine the load. If any explosives, or packages of explosives, are found to be damaged or spilt, or if (where it is not practicable to examine the whole of the load) there is reason to suspect that such damage or spillage may have occurred, the vehicle should not continue its journey but the driver or attendant should without delay communicate with a competent person and should deal with the explosives in such a manner as the competent person may specify. If there appears to be a serious risk to the public, the Police and Fire Service for the area where the incident has taken place should be informed immediately. If a vehicle carrying explosives is involved in a road accident, the driver should inform the person in charge at the scene of the accident that the vehicle is carrying explosives.

58. If damaged packages or spilt explosives are discovered during loading or unloading the procedure given below should be followed:-

(a) If a damaged outer package is found but no explosive is exposed or spilt and there is no reason to suppose that the explosive may have been damaged or contaminated, a competent person should be informed and the damaged package dealt with as he may direct. Pending his decision, the damaged package (if it can be moved without spillage or exposure of explosive) may if necessary be moved sufficiently to enable the loading or unloading of undamaged packages to continue.

(b) Where any explosive appears to be damaged or contaminated, or any explosive has been exposed or spilt:-

    (i) A competent person should be informed forthwith and the situation dealt with as he may direct.

    (ii) If there appears to be a serious risk to the public, the Police and Fire Service for the area where the incident has taken place should be informed immediately.

    (iii) No further loading, unloading or handling of explosive should take place in or near the vehicle, nor should the vehicle be moved, until the competent person has indicated that it is safe to do so.

    (iv) The competent person should ensure that any spilt explosive is either destroyed, or collected and placed in a suitable receptacle for disposal.

PROCEDURE IN THE EVENT OF DELAY DURING JOURNEY

Regulation 19(3)

> "19(3) Under Mode 3 or 4, if the presence of the vehicle in any place constitutes a serious risk to safety, the driver, attendant or other person in attendance shall inform the Police and Fire Service either in person or through the 999 call system that the vehicle has stopped in that place and is carrying explosives and also take any necessary steps to warn the public of the hazard."

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59. The hazard warning light signalling device fitted to the vehicle should be used:-

(a) when the vehicle is stationary on a carriageway having broken down or been involved in an accident; or

(b) if the load is exposed in such a way as to present a hazard to the general public and if the driver has stopped the vehicle prior to summoning the emergency services.

APPENDIX 1
(Para 9 refers)

TABLE SHOWING PERMITTED MIXED LOADS OF GOODS IN MORE THAN ONE COMPATIBILITY GROUP

$\boxed{\text{A}}$					
✓	$\boxed{\text{B}}$				
X	✓	C & D SUBST			
X	✓	✓ *	C D & E ARTICLE		
X	✓	X	✓	F	
✓	✓	✓	✓	✓	$\boxed{\text{G}}$

NOTES:

the symbol ☐ denotes that the goods in the Compatibility Groups indicated are so over-packed in a suitable container that in the event of explosion or burning of the contents, the explosion or fire is moderated by that container so that any explosives of a different Compatibility Group outside the container do not explode in mass or burn in mass.

All Compatibility Groups (other than S) not specified in this table should each be stowed in a separate load-carrying compartment, portable magazine or freight container.

✓	indicates a permitted mixed load
X	indicates a prohibited mixed load
*	subject to precautions against harmful physical interactions
"SUBST"	indicates that the explosives concerned are substances
"ARTICLE"	indicates that the explosives concerned are articles.

PART 4

ALPHABETICAL LIST OF INTERIM/INTENDED CLASSIFICATIONS OF EXPLOSIVES (ALICE)

CAVEAT

"ALICE" is a working paper devised within HSE as a tool in developing new regulations on explosives. It has no legal status and is not a substitute for the "List of Classifications of Explosives" (LOCOE) which is due to be published at a later date. "ALICE" provides some indication of what can be expected from LOCOE. (The entries in columns 5 and 6 are a guide to current lines of thought but are subject to change during consultation and to the rectification of any errors).

KEY

CLER - Classification and Labelling of Explosives Regulations 1983
CER - Conveyance of Explosives by Road Regulations, Draft 1/85
MORROL - Making of Records and Reporting of Losses Regulations, 7/84

Col 2 (i) Where a letter appears after the HSE Number this indicates that the name and HSE Number are repeated elsewhere in the list with other UN Number(s)

(ii) Where an asterisk appears after the HSE number this indicates that the item is also listed under one or more synonyms

Col 3 Data from List of Authorised Explosives, January 1984 edition (with amendments 1, 3, 5-17/84)

1 = substance
2 = article

Subsequently, data from the List of Classifications of Explosives will give further entries arising from CLER Regulation 3

3 = combination) see definition of "CLASSIFIED" in
4 = unit load) CLER Regulation 2(1)

Col 4 Data from CLER Schedules 4 and 5

0 = item not listed in Schedule 4 or 5
1 = item listed in Schedule 4 or 5 (additional labelling)

Col 5 Data from CER Regulations 14(1)(e) and 15(2)(g)

0 = item approved for conveyance without constant attendance.) interim entries) without prejudice)

1 = item subject to constant attendance etc.))

Col 6 Data relating to MORROL Regulations 3 and 5

0 = item not subject to recording provisions) interim entries

1 = item subject to recording provisions) without prejudice

Col 10 An entry of "0000" or "9999" indicates that there is no UN Serial number in the List of Authorised Explosives.

ALPHABETICAL LIST OF INTERIM/INTENDED CLASSIFICATIONS OF EXPLOSIVES (ALICE)

LIST 1 - BASIC

Name	HSE No	Form		Security		Pack-aging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
ARP Practice Incendiary Bombs	72008	2	0	0	0		1.3	G	0010	
Abric 26 Composition	52014	1	0	1	1		1.1	A	0000	
Abric 41 Composition	52015	1	0	1	1		1.1	A	0000	
Abric 50 Composition	52016	1	0	1	1		1.1	A	0000	
Alamex	32207	1	1	1	1		1.1	D	0082	
Alarm Mine	63098	2	0	0	0		1.3	G	0171	
Aldinex	32191	1	1	1	1		1.1	D	0082	
Aluminite No 2	32001	1	1	1	1		1.1	D	0082	
Aluminium Torches	72003	2	0	0	0		1.4	G	0336	
Aluminium Torches, Standard Brand	72006	2	0	0	0		1.4	G	0336	
Amatol	32003	1	1	1	1		1.1	D	0082	
American Ballistite	31003	1	1	1	1		1.1	C	0160	
Aminex	20059	1	1	1	1		1.1	D	0241	
Ammoblast	20033	1	1	1	1		1.1	D	0082	
Ammogex	20047	1	1	1	1		1.1	D	0082	
Ammogex A	20048	1	1	1	1		1.1	D	0082	
Ammon Dynamite	31005	1	1	1	1		1.1	D	0081	
Ammon Gelatine	31010	1	1	1	1		1.1	D	0081	
Ammon Gelatine Dynamite	31019	1	1	1	1		1.1	D	0081	
Ammon Gelignite	31011	1	1	1	1		1.1	D	0081	
Ammonal	32005	1	1	1	1		1.1	D	0082	
Ammonex	62001	2	1	1	1		1.1	D	0048	
Ammonium Picrate	32008	1	0	1	1		1.1	D	0004	
Ammospex	20001	1	1	1	1		1.1	D	0082	
Ammospex (NI)	20051	1	1	1	1		1.1	D	0082	
Ammospex A	20002	1	1	1	1		1.1	D	0082	
Ammospex C	20003	1	1	1	1		1.1	D	0082	
Ammospex S	20049	1	1	1	1		1.1	D	0082	
Amorces	72007	2	0	0	0		1.4	G	0336	
Anobel	20018	1	1	1	1		1.1	D	0082	
Anodet Delay Detonators	63082	2	1	1	1		1.1	B	0029	
Anti-riot Cartridge	72142	2	0	1	1		1.4	G	0301	
Antifrost Nitrox No 2 'S'	31021	1	1	1	1		1.1	D	0081	
Antifyre Percussion Caps	61001	2	0	0	0		1.4	S	0044	
Aquaflex Initiating Connectors	63084	2	1	1	1		1.1	B	0030	
Aquaflex Seismic Cord	62108	2	1	1	1		1.1	D	0065	
Aquagel	20036	1	1	1	1		1.1	D	0241	
Aquespex	31236	1	1	1	1		1.1	D	0081	
Arcite Propellant Grains	20084	2	0	1	1		1.3	C	0272	
Ardeer Ballistite	31029A	1	1	1	1		1.1	C	0160	
Ardeer Ballistite	31029B	1	1	1	1		1.3	C	0161	
Ardeer Cordite	31030A	1	1	1	1		1.1	C	0160	
Ardeer Cordite	31030B	1	1	1	1		1.3	C	0161	

Name	HSE No	Form		Security		Pack-aging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Ardex	32009	1	1	1	1		1.1	D	0072	
Ardite	32010	1	1	1	1		1.3	C	0161	
Armorite	31037	1	1	1	1		1.1	D	0081	
Axial No 1	31317	1	1	1	1		1.1	D	0081	
Axite No 3	31039	1	1	1	1		1.1	C	0160	
Baker BP2 Firing Head Igniter	62140	2	0	0	0		1.4	G	0320	
Baker High Temperature Power Charge	62060	2	0	0	0		1.4	C	0278	
Baker Secondary Igniter	62048	2	1	0	0		1.3	G	0315	
Ball Powder	31040	1	1	1	1		1.1	C	0160	
Ballistite	31041A	1	1	1	1		1.1	C	0160	
Ballistite	31041B	1	1	1	1		1.3	C	0161	
Ballistite A16	31043	1	1	1	1		1.1	C	0160	
Ballistite B16	31227	1	1	1	1		1.1	C	0160	
Ballistite Whaling Charge	62142	2	0	1	1		1.1	C	0279	
Barium Tri-nitro-resorcinate (Styphnate) (Wet)	52001	1	0	1	1		1.1	A	0000	
Basex	31223	1	1	1	1		1.1	D	0081	
Battery Pockets	61002	2	0	0	0		1.4	S	0044	
Belex	31044	1	1	1	1		1.1	D	0081	
Belex 1	31045	1	1	1	1		1.1	D	0081	
Belex 1(W)	31047	1	1	1	1		1.1	D	0081	
Belex 2	31049	1	1	1	1		1.1	D	0081	
Belex 2(W)	31316	1	1	1	1		1.1	D	0081	
Belex 3	31051	1	1	1	1		1.1	D	0081	
Belex 3(W)	31052	1	1	1	1		1.1	D	0081	
Belex 4	31053	1	1	1	1		1.1	D	0081	
Belex 4(W)	31050	1	1	1	1		1.1	D	0081	
Belex 5	31055	1	1	1	1		1.1	D	0081	
Belex 5(W)	31054	1	1	1	1		1.1	D	0081	
Belisha Beacons	72010	2	0	0	0		1.4	G	0336	
Bengal Sparklers 1st Definition	72011	2	0	0	0		1.4	G	0336	
Bengal Sparklers 2nd Definition	72012	2	0	0	0		1.4	G	0336	
Bengal Sparklers 3rd Definition	72013	2	0	0	0		1.4	G	0336	
Bengal Sparklers 4th Definition	72014	2	0	0	0		1.4	G	0336	
Bengal Sparklers 5th Definition	72015	2	0	0	0		1.4	G	0336	
Bengal Sparklers 6th Definition	72016	2	0	0	0		1.4	G	0336	
Bengal Torches 1st Definition	72017	2	0	0	0		1.4	G	0336	
Bengal Torches 2nd Definition	72018	2	0	0	0		1.4	G	0336	
Bengal Torches 3rd Definition	72019	2	0	0	0		1.4	G	0336	
Bickfords Patent Volley Firers	62002	2	1	0	0		1.3	G	0315	
Bird Scarer Flash Units	72134	2	0	0	0		1.4	G	0336	
Bird Scarers	72020	2	0	0	0		1.4	G	0336	
Birdscaring Cartridge Mk 2	72145	2	0	0	0		1.4	G	0336	
Blackpowder Igniter wick	62003	2	1	1	1		1.4	G	0066	
Blast Furnace Demolition Charges	62123	2	1	1	1		1.1	D	0048	
Blasting Abelite	32012	1	1	1	1		1.1	D	0082	
Blasting Gelatine	31066	1	1	1	1		1.1	D	0081	

Name	HSE No	Form		Security		Pack-aging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Bofors JK6 Powder	32018	1	1	1	1		1.1	C	0160	
Bofors JK6B Powder	32204	1	1	1	1		1.1	C	0160	
Bofors JK6C Powder	32205	1	1	1	1		1.1	C	0160	
Bofors JK6M Powder	32203	1	1	1	1		1.1	C	0160	
Bolt Cutter M4	61101	2	0	0	0		1.4	S	0323	
Bombs, Aircraft, Practice Ret'd	72152	2	0	0	0		1.2	G	0015	
Bombs, Aircraft, Training 25 lb Smoke and Flash No 1	72022	2	0	0	0		1.2	G	0015	
Bonocord	62111	2	1	1	1		1.1	D	0065	
Boosters	63097	2	1	1	1		1.1	B	0029	
Boosters Back Off	62154	2	1	1	1		1.1	D	0048	
Boostex	32185	1	1	1	1		1.1	D	0082	
Brixal 70/30	32222	1	1	1	1		1.1	D	0084	
Brock's Bengals	72023	2	0	0	0		1.4	G	0336	
Brock's Igniters	72024	2	1	0	0		1.4	G	0325	
Brocks Nitrate Mixture (Moisture Repellant)	20053	1	0	1	1		1.1	D	0000	
CIL Primers No 4BP	61066	2	0	0	0		1.4	S	0044	
Cable Crimping Cartridges	61081	2	0	0	0		1.4	S	0323	
Cable Cutter	63093	2	1	1	1		1.4	S	0173	
Candles, Smoke, White Mk N6	72025	2	0	0	0		1.4	G	0197	
Candles, Smoke, Yellow	72026	2	0	0	0		1.4	G	0197	
Capped (Detonator) Safety Fuze	63001	2	1	1	1		1.1	B	0029	
Capped Fuzes with Connectors	63003	2	1	1	1		1.1	B	0029	
Cardox Safety Electric Fuseheads	61003	2	0	0	0		1.4	S	0206	
Carrick Short Delay Detonators	63004	2	1	1	1		1.1	B	0029	
Cartridge Actuated Devices 3/8" Underwater Cable	61103	2	0	0	0		1.4	S	0070	
Cartridge Anti-Riot Irritant	72027	2	0	1	1		1.4	G	0301	
Cartridge Cover Remover	62104	2	0	0	0		1.4	C	0276	
Cartridge Percussion LC (PDU K4 A1)	62129	2	0	0	0		1.4	C	0276	
Cartridge Power, Type SK 5233	61105	2	0	0	0		1.4	S	0323	
Cartridge for Cable Cutter	63092A	2	1	1	1		1.1	B	0030	
Cartridge for Cable Cutter	63092B	2	1	1	1		1.4	B	0255	
Cartridge, Signal Type BA	72139	2	0	0	0		1.3	G	0054	
Cartridge, Signal, Miniflare MkI (1st Definition)	72116	2	0	0	0		1.3	G	0054	
Cartridge, Signal, Miniflare MkI (2nd Definition)	72134	2	0	0	0		1.3	G	0054	
Cartridge for Small Arms (other than Safety cartridges) 0 in C No 1	62007	2	0	0	0		0.0	0	0000	
Cartridges, Brown, Smoke, Puff	72028	2	0	0	0		1.4	G	0303	
Cartridges for Cannon, Shells, Mines, Depth Charges, Torpedoes, blasting or other like purposes, 0 in C No 1; also Section 44 (EA 1875)	62005	2	0	1	1		0.0	0	0000	

Name	HSE No	Form		Security		Pack-aging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Cartridges, Cockpit Canopy Jettison	63005A	2	0	0	0		1.3	C	0275	
Cartridges, Cockpit Canopy, Jettison	63005B	2	0	0	0		1.4	C	0276	
Cartridges: 15mm Distress Signal, 'Komet'	72177	2	0	0	0		1.4	G	0312	
Cartridges for Emergency Under-carriage Lowering Device	62006A	2	0	0	0		1.3	C	0275	
Cartridges for Emergency Under-carriage Lowering Device	62006B	2	0	0	0		1.4	C	0276	
Cartridges, Flash Photographic	63006A	2	0	1	1		1.1	G	0049	
Cartridges, Flash Photographic	63006B	2	0	1	1		1.3	G	0050	
Cartridges, Illuminating	72029	2	0	0	0		1.4	G	0297	
Cartridges for Metal Forming	61088	2	0	0	0		1.4	S	0323	
Cartridges, Seat Ejection, Auxiliary	63007	2	0	0	0		1.4	C	0276	
Cartridges, Seat Ejection, Drogue	63008	2	0	0	0		1.4	C	0276	
Cartridges, Seat Ejection, Primary	63009	2	0	0	0		1.4	C	0276	
Cartridges, Shotgun, Signal, Sound MkI	72111	2	0	0	0		1.3	G	0054	
Cartridges, Shotgun, Signal, Sound MkII	72114	2	0	0	0		1.3	G	0054	
Cartridges, Shotgun, Signal, Sound MkIII	72112	2	0	0	0		1.3	G	0054	
Cartridges, Signal	72030	2	0	0	0		1.3	G	0054	
Cartridges, Tracking, Flash	63011	2	0	1	1		1.1	G	0049	
Cartridges, Type UM	62008	2	0	0	0		1.4	G	0312	
Cartridges for Velocity Power Drive	63012	2	0	0	0		1.3	C	0275	
Cases for Turbo-Starter Cartridges (Empty) Primed 1st Definition	61004	2	0	0	0		1.4	S	0055	
Cases for Turbo-Starter Cartridges (Empty) Primed 2nd Definition	61005	2	0	0	0		1.4	S	0055	
Casting Powder	31354	1	1	1	1		1.1	C	0160	
Casting Powder, Single Base	32221	1	1	1	1		1.1	C	0160	
Charges Gyro Operating	31313	2	0	1	1		1.3	C	0186	
Charges Gyro Operating for Rockets (Type 889)	62020	2	0	0	0		1.3	C	0186	
Charges for Metal Forming (Nitro Metall)	62070	2	1	1	1		1.1	D	0059	
Cigarette Lighting Paper	72031	2	0	0	0		1.3	G	0335	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Cilgel B	31056	1	1	1	1		1.1	D	0081	
Coloured Fire Torches	72032	2	0	0	0		1.3	G	0335	
Coloured Flame Torches	72033	2	0	0	0		1.3	G	0335	
Coloured Signal Smoke	72183	2	0	0	0		1.4	S	0337	
Coloured Smoke Candles	72034	2	0	0	0		1.4	G	0197	
Coloured Sparklers	72035	2	0	0	0		1.3	G	0335	
Comets	72036	2	0	0	0		1.4	G	0336	
Commercial Waterproof Primers	32038	1	1	1	1		1.1	D	0084	
Composite Cartridge for Blasting	62107	2	1	1	1		1.1	D	0048	
Composite Modified Casting Powder	31355	1	1	1	1		1.1	C	0160	
Composition SR44	71013	1	0	1	1		1.1	0	0000	
Composition SR126	71004	1	0	1	1		1.1	0	0000	
Composition SR126A (P 14)	71017	1	0	1	1		1.1	0	0000	
Composition SR278	71005	1	0	1	1		1.1	0	0000	
Composition SR368 (RT 9)	71006	1	0	1	1		1.1	0	0000	
Composition SR371A	71023	1	0	1	1		1.1	G	0094	
Composition SR371C	71010	1	0	1	1		1.1	G	0094	
Composition SR379	71003	1	0	1	1		1.1	0	0000	
Composition SR390 (RT 8)	71001	1	0	1	1		1.1	G	0000	
Composition SR666	71012	1	0	1	1		1.1	0	0000	
Composition SR867	71002	1	0	1	1		1.3	G	0000	
Composition SR886	71011	1	0	1	1		1.1	0	0000	
Composition for Flare Tracking - Day	71019	1	0	1	1		1.2	G	0000	
Composition for Flare Tracking - Night	71021	1	0	1	1		1.2	G	0000	
Concorde MEPU Start Cartridges	62127	2	0	0	0		1.1	C	9999	
Coolite A	31079	1	1	1	1		1.3	C	0161	
Cooppal Alfa Smokeless Powder	31080	1	1	1	1		1.1	C	0160	
Cooppal Coppella Powder	31233	1	1	1	1		1.1	C	0160	
Cooppal's 76 Powder	32040	1	1	1	1		1.1	C	0160	
ooppal's Excelsior C28	32039	1	1	1	1		1.1	C	0160	
Cooppal's Excelsior Powder	32042	1	1	1	1		1.1	C	0160	
Cooppal's Minerva Smokeless Powder	32043	1	1	1	1		1.1	C	0160	
Cooppal's Number 2 Smokeless Powder	32044	1	1	1	1		1.1	C	0160	
Cooppal's Parabellum Powder	32188	1	1	1	1		1.1	C	0160	
Cooppal's Perfecta Powder	32045	1	1	1	1		1.1	C	0160	
Cooppal's Sagitta Powder	32041	1	1	1	1		1.1	C	0160	
Cordeau Bickford	62011	2	1	1	1		1.1	D	0065	
Cordite	31081A	1	1	1	1		1.1	C	0160	
Cordite	31081B	1	1	1	1		1.3	C	0161	
Cordite A	31082A	1	1	1	1		1.1	C	0160	
Cordite A	31082B	1	1	1	1		1.3	C	0161	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
1	2	3	label 4	Con 5	Rec 6	7	8	9	10	11
Cordite AN	31083A	1	1	1	1		1.1	C	0160	
Cordite AN	31083B	1	1	1	1		1.3	C	0161	
Cordite ASN	31031A	1	1	1	1		1.1	C	0160	
Cordite ASN	31031B	1	1	1	1		1.3	C	0161	
Cordite CD	31032A	1	1	1	1		1.1	C	0160	
Cordite CD	31032B	1	1	1	1		1.3	C	0161	
Cordite HW	31033A	1	1	1	1		1.1	C	0160	
Cordite HW	31033B	1	1	1	1		1.3	C	0161	
Cordite MD	31087A	1	1	1	1		1.1	C	0160	
Cordite MD	31087B	1	1	1	1		1.3	C	0161	
Cordite N	31088A	1	1	1	1		1.1	C	0160	
Cordite N	31088B	1	1	1	1		1.3	C	0161	
Cordite NK	31089A	1	1	1	1		1.1	C	0160	
Cordite NK	31089B	1	1	1	1		1.3	C	0161	
Cordite NP	31090A	1	1	1	1		1.1	C	0160	
Cordite NP	31090B	1	1	1	1		1.3	C	0161	
Cordite NQ	31091A	1	1	1	1		1.1	C	0160	
Cordite NQ	31091B	1	1	1	1		1.3	C	0161	
Cordite NQK	30192A	1	1	1	1		1.1	C	0160	
Cordite NQK	31092B	1	1	1	1		1.3	C	0161	
Cordite NQP	31093A	1	1	1	1		1.1	C	0160	
Cordite NQP	31093B	1	1	1	1		1.3	C	0161	
Cordite W	31034A	1	1	1	1		1.1	C	0160	
Cordite W	31034B	1	1	1	1		1.3	C	0161	
Cordite WM	31035A	1	1	1	1		1.1	C	0160	
Cordite WM	31035B	1	1	1	1		1.3	C	0161	
Cordtex	62012	2	1	1	1		1.1	D	0065	
Cordtex Train Assemblies	62013	2	1	1	1		1.1	D	0065	
Cosminex	31224	1	1	1	1		1.1	D	0081	
Cosmingel	31283	1	1	1	1		1.1	D	0081	
Crack Shots	72039	2	0	0	0		1.4	G	0336	
Cromex	20037	1	1	1	1		1.1	D	0082	
Cyclonite (Wet)	32046*	1	1	1	1		1.1	D	0072	
Cyclotetramethylene Tetranitramine (HMX) (Wet)	32047	1	1	1	1		1.1	D	0226	
Cyclotrimethylene Trinitramine (RDX) (Wet)	32046*	1	1	1	1		1.1	D	0072	
Delay Arming Cartridge Unit	63013	2	0	1	1		1.4	G	0276	
Delay Detonators (1st Def)	63014	2	1	1	1		1.1	B	0030	
Delay Detonators (2nd Def)	63017	2	1	1	1		1.1	B	0030	
Delay Elements	62014	2	0	0	0		1.3	G	0316	
Delay Fuze Assembly (10 seconds)	61007	2	1	0	0		1.4	S	0105	
Delay Puffers	63018	2	1	1	1		1.1	B	0030	
Delta 1 and Delta 2	20100	1	1	1	1		1.1	D	0241	
Denespex	31096	1	1	1	1		1.1	D	0081	
Destructors Incendiary No 3	72148	2	0	0	0		1.3	G	0010	
Detasheet	32227	1	1	1	1		1.1	D	0084	
Detonating Fuze 'Eclair Duplex'	62017	2	1	1	1		1.1	D	0065	
Detonating Fuze 'Eclair Plastex'	62018	2	1	1	1		1.1	D	0065	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Detonating Fuze (1st Def)	62015	2	1	1	1		1.1	D	0065	
Detonating Fuze (2nd Def)	62016	2	1	1	1		1.1	D	0065	
Detonating Fuze Boosters (D F Boosters)	62019	2	1	1	1		1.1	D	0060	
Detonating Relay VKX 440	62128	2	1	1	1		1.1	D	0042	
Detonating Relays	63019	2	1	1	1		1.1	B	0029	
Detonator Assembly - Harpoon	63100	2	0	1	1		1.4	B	0000	
Detonator M47 Harpoon	63101	2	0	1	1		1.1	B	0000	
Detonator Packs	63020	2	0	1	1		1.1	B	0073	
Detonators (Safety and Arming Unit) for Rockets HE (Type 889)	63022	2	0	1	1		1.1	B	0073	
Detonators O in C No 1	63021	2	1	1	1		1.1	B	0029	
Detonators SK117	63090	2	0	1	1		1.1	B	0073	
Detonators for 20 mm Hispano Ammunition	63023	2	0	1	1		1.1	B	0073	
Dial-a-Star	72168A	2	0	0	0		1.3	G	0054	
Dial-a-Star	72168B	2	0	0	0		1.4	S	0373	
Detonator for Retaining Strap Cutter	63103	2	1	1	1		1.1	B	0030	
Di-nitro-phenol	32049	1	1	1	1		1.1	D	0076	
Di-nitro-resorcinol	32050	1	1	1	1		1.1	D	0078	
Disconnect Device or Safety Valve (XP/10/10B)	61094	2	0	0	0		1.4	S	0323	
Dispenser, Powder Irritant	62151	2	0	1	1		1.4	G	0301	
Dopex G	31256	1	1	1	1		1.1	D	0081	
Dopex MX	31258	1	1	1	1		1.1	D	0081	
Dopex P	31257	1	1	1	1		1.1	D	0081	
Dopex SX	31263	1	1	1	1		1.1	D	0081	
opex W	31277	1	1	1	1		1.1	D	0081	
iftex	31264	1	1	1	1		1.1	D	0081	
iftex 'S'	31097	1	1	1	1		1.1	D	0081	
u Pont Powder No 15	32051	1	1	1	1		1.1	C	0160	
Du Pont Powder No 16	32052	1	1	1	1		1.1	C	0160	
Du Pont Powder No 25	32053	1	1	1	1		1.1	C	0160	
Du Pont Smokeless Shotgun Powder	32054	1	1	1	1		1.1	C	0160	
Dynafrax	31271	1	1	1	1		1.1	D	0081	
Dynagex	31253	1	1	1	1		1.1	D	0081	
Dynamex B	31310	1	1	1	1		1.1	D	0081	
Dynamex IV	31311	1	1	1	1		1.1	D	0081	
Dynamite	31102	1	1	1	1		1.1	D	0081	
Dynobel	31296	1	1	1	1		1.1	D	0081	
ECP No 2	31367	1	1	1	1		1.1	D	0081	
ECP No 3	31307	1	1	1	1		1.1	D	0081	
ECP Polygel	31243	1	1	1	1		1.1	D	0081	
ED 101, ED 102, ED 103, EDCS	20089	1	1	1	1		1.1	D	0241	
Edanfo, Edanfoal	20090	1	1	1	1		1.1	D	0082	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
1	2	3	label 4	Con 5	Rec 6	7	8	9	10	11
Ejection Seat Units	63087	2	0	1	1		1.4	C	0276	
Ejector Bolt 407	63096	2	0	1	1		1.4	C	0276	
Electric Boosters	63027	2	1	1	1		1.1	B	0225	
Electric Detonators	63024A	2	1	1	1		1.1	B	0030	
Electric Detonators	63024B	2	1	1	1		1.4	B	0255	
Electric Detonators for Boosters	63028	2	1	1	1		1.1	B	0030	
Electric Fuzes 1st Def)	62021	2	0	0	0		1.4	G	0317	
Electric Fuzes 2nd Def)	62022	2	0	0	0		1.4	G	0317	
Electric Fuzes 3rd Def)	62032	2	0	0	0		1.4	G	0317	
Electric Lighters for Igniter Cord	61008	2	0	0	0		1.4	S	0206	
Electric Primers	62025	2	0	0	0		1.4	G	0320	
Electric Primers	63085	2	1	1	1		1.1	B	0030	
Electric Seismic Detonators NDD	63083A	2	1	1	1		1.1	B	0030	
Electric Seismic Detonators NDD	63083B	2	1	1	1		1.4.	B	0255	
Electric Seismic Primer	63029	2	1	1	1		1.1	B	0225	
Electric Sparklers	72004	2	0	0	0		1.4	G	0336	
Electric Squibs S75	61095	2	0	0	0		1.4	S	0206	
Electronic Pack/Actuator Assembly 600A	61078	2	0	0	0		1.4	S	0323	
Electrosounders	63030	2	1	1	1		1.1	B	0030	
Eley Kynoch Bright Ignition Priming Composition	71018	1	0	1	1		1.1	0	0000	
Eley Kynoch Dark Ignition Priming DI 34	71077	1	0	1	1		1.3	G	0000	
Eley Kynoch Dark Ignition Priming DI 154	71008	1	0	1	1		1.3	G	0000	
Eley Kynoch Dark Ignition Priming DI 58	71009	1	0	1	1		1.3	G	0000	
Eley Kynoch Eleyprime 206 Battery Pockets	61104	2	0	0	0		1.4	S	0044	
Eley Kynoch No 190EB Military Cap	61085	2	0	0	0		1.4	S	0044	
Eley Kynoch No 153A Percussion Cap	61084	2	0	0	0		1.4	S	0044	
Eley Kynoch No 154 Percussion Cap	61080	2	0	0	0		1.4	S	0044	
Eley Kynoch No 210 Percussion Cap	61024	2	0	0	0		1.4	S	0044	
Eley Kynoch No 211 Percussion Cap	61022	2	0	0	0		1.4	S	0044	
Eley Kynoch No 212 Percussion Cap	61023	2	0	0	0		1.4	S	0044	
Eley Kynoch 0.22 Rimfire Tracer Cartridges	61089	2	0	0	0		1.4	S	0012	
Eley Sure Fire Primers	61071	2	0	0	0		1.4	S	0044	
Energex	31297	1	1	1	1		1.1	D	0081	

Name	HSE No	Form	Security			Packaging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Eversoft Blasting Gelatine	31116	1	1	1	1		1.1	D	0081	
Eversoft Gelamex	31110	1	1	1	1		1.1	D	0081	
Eversoft Gelamex 'A'	31119	1	1	1	1		1.1	D	0081	
Eversoft Gelamex 'B'	31114	1	1	1	1		1.1	D	0081	
Eversoft Gelamex 'C'	31101	1	1	1	1		1.1	D	0081	
Eversoft Gelamex 'D'	31225	1	1	1	1		1.1	D	0081	
Eversoft Gelamex 'E'	31226	1	1	1	1		1.1	D	0081	
Eversoft Gelamex 'F'	31265	1	1	1	1		1.1	D	0081	
Eversoft Gelamex 'L'	31247	1	1	1	1		1.1	D	0081	
Eversoft Gelamex (NI)	31303	1	1	1	1		1.1	D	0081	
Eversoft Gelamex No 1	31117	1	1	1	1		1.1	D	0081	
Eversoft Gelamex No 1 (NI)	31304	1	1	1	1		1.1	D	0081	
Eversoft Gelamex No 2	31111	1	1	1	1		1.1	D	0081	
Eversoft Gelamex No 3	31112	1	1	1	1		1.1	D	0081	
Eversoft Gelignite	31120	1	1	1	1		1.1	D	0081	
Eversoft Opencast Gel	20058	1	1	1	1		1.1	D	0241	
Eversoft Opencast Gelignite	31113	1	1	1	1		1.1	D	0081	
Eversoft Opencast Gelignite (NI)	31305	1	1	1	1		1.1	D	0081	
Eversoft Plaster Gelatine	31121	1	1	1	1		1.1	D	0081	
Eversoft Plaster Gelatine (NI)	31306	1	1	1	1		1.1	D	0081	
Excelsior Safety Electric Fuzes	61012	2	0	0	0		1.4	S	0206	
Exploders for Shells, Bombs, Mines, Depth Charges and Torpedoes	62026	2	1	1	1		1.1	D	0042	
Exploding Wire Initiated Welding Packs	62135	2	1	1	1		1.1	D	0065	
Explosive Bolt-Harpoon	63102	2	0	1	1		1.4	F	9999	
Explosive Corks	72041	2	0	0	0		1.4	G	0336	
Explosive Motor Actuating Cartridge	61070	2	0	0	0		1.4	S	0323	
Explosive Motor, 1st Def	61013	2	0	0	0		1.4	S	0323	
Explosive Motor, 2nd Def	61067	2	0	0	0		1.4	S	0323	
Explosive Release Links	62137	2	1	1	1		1.4	B	0255	
Explosive Tube Welding Device	63091	2	0	1	1		1.4	B	0323	
Explosive Welding Devices	62124	2	1	1	1		1.1	D	0065	
FCDC Unit-Harpoon	62161	2	0	1	1		1.4	S	9999	
FI5	31109	1	1	1	1		1.1	D	0081	
Filled Gaines	63032A	2	1	1	1		1.1	B	0225	
Filled Gaines	63032B	2	1	1	1		1.2	B	0268	
Filled Gaines	62029	2	1	1	1		1.1	D	0042	
Filled Grenades (Hand or Rifle)	63033A	2	0	1	1		1.1	F	0292	
Filled Grenades (Hand or Rifle)	63033B	2	0	1	1		1.2	F	0293	
Filled Grenades (Hand or Rifle)	62027	2	0	1	1		1.1	D	0284	
Fire Detector and Fire Extinguisher Actuator	62031	2	0	0	0		1.4	C	0276	
Fire Extinguisher Actuator	61014	2	0	0	0		1.4	S	0323	
Flame Detector Cord	61015	2	1	0	0		1.4	S	0105	
Flare Tracking Assembly Day	72164	2	0	0	0		1.3	G	0212	
Flare Tracking Assembly Night	72165	2	0	0	0		1.3	G	0212	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Flares, Infra Red	62032	2	0	0	0		1.3	G	0093	
Flares, Tracking Visual	72044	2	0	0	0		1.3	G	0093	
Flares, Tracking for Rockets (Type 889)	72043	2	0	0	0		1.3	G	0093	
Flares, Tracking, Nos 2,3,4,5	72042	2	0	0	0		1.3	G	0093	
Flash Bulb Primer Composition	52003	1	0	1	1		1.1	A	0000	
Flash Light Ignition Caps 1st Definition	72046	2	0	0	0		1.4	G	0336	
Flash Light Ignition Caps 2nd Definition	72109	2	0	0	0		1.4	G	0336	
Flash Powder	71016A	1	0	1	1		0.0	0	0000	
Flash Powder	71016B	1	0	1	1		0.0	0	0000	
Flash Sound Signals	72048	2	0	0	0		1.1	G	0196	
Flashlight Ignition Tape	72047	2	0	0	0		1.4	G	0336	
Flight Termination Assembly	63107	2	1	1	1		1.4	B	0350	
Float Signal, Submerged with Grenade	72050	2	0	0	0		1.2	G	0313	
Floats Smoke, Flame 3½ lb	72051	2	0	0	0		1.3	G	0092	
Flowgel	20039	1	1	1	1		1.1	D	0241	
Forcite	31057	1	1	1	1		1.1	D	0081	
Fortex	31115	1	1	1	1		1.1	D	0081	
Frangex	31298	1	1	1	1		1.1	D	0081	
Frangex No 1	31299	1	1	1	1		1.1	D	0081	
Friction Tubes	63036	2	0	0	0		1.4	G	0317	
Fulminate of Mercury (Wet)	51001	1	1	1	1		1.1	A	0135	
Fulminate of Silver (Wet)	51002	1	0	1	1		1.1	A	0000	
Fusible Release Links	62120	2	0	0	0		1.4	C	0276	
Fuze Heads for Cardox Heaters (2nd Definition)	62034	2	1	0	0		1.4	G	0325	
Fuze Heads for Cardox Heaters (1st definition)	62033	2	1	0	0		1.4	G	0325	
Fuze Heads for Delay Detonators	62035	2	1	0	0		1.4	G	0325	
Fuze Heads for Electric Detonators and Safety Electric Fuzes (1st Definition)	62036	2	1	0	0		1.4	G	0325	
Fuze Heads for Electric Detonators and Safety Electric Fuzes (3rd Definition)	62038	2	1	0	0		1.4	G	0325	
Fuze Heads for Electric Detonators and Safety Electric Fuzes (2nd Definition)	62037	2	1	0	0		1.4	B	0257	
Fuzehead Assemblies	61016	2	0	0	0		1.4	S	0206	
Fuzeheads, Electric for Flare Tracking Assembly	62153	2	0	0	0		1.4	G	0317	
Fuzes for Shells, Bombs and Flares	62044	2	0	0	0		1.4	G	0317	
Fuzes for Shells, Bombs and Flares	63037	2	1	1	1		1.4	B	0257	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
1	2	3	Label 4	Con 5	Rec 6	7	8	9	10	11
Gamicord Hericord Isoltex No 10, 20, 30	62166	2	1	1	1		1.1	D	0065	
Gas Flare Igniting Cartridge	72143	2	0	0	0		1.4	G	0312	
Gas Generator for Sea Dart Missile	61008	2	0	0	0		1.4	S	0323	
Gelatine	31246	1	1	1	1		1.1	D	0081	
Gelatine Dynamite	31128	1	1	1	1		1.1	D	0081	
Gelex A	31129	1	1	1	1		1.1	D	0081	
Gelignite	31131	1	1	1	1		1.1	D	0081	
Generators Smoke Training	72146	2	0	0	0		1.4	G	0303	
Geoflex Seismic Cord	62109	2	1	1	1		1.1	D	0065	
Geoflo	32195	1	1	1	1		1.1	D	0082	
Geolok	31282	1	1	1	1		1.1	D	0081	
Geopak	31273	1	1	1	1		1.1	D	0081	
Geophex	31134	1	1	1	1		1.1	D	0081	
Geoslab	31286	1	1	1	1		1.1	D	0081	
Giant Disc Amorces	72052	2	0	0	0		1.1	G	0333	
Gloria Torches	72053	2	0	0	0		1.4	G	0336	
Gomme A.C.	31379	1	1	1	1		1.1	D	0081	
Granulated Guncotton Powder	32068	1	1	1	1		1.1	D	0340	
Granulex	31006	1	1	1	1		1.1	D	0081	
Grenade, Hand Signal Smoke Mk 3	72184	2	0	0	0		1.4	S	0337	
Grenades GX (Light and Sound)	62105	2	0	1	1		1.2	G	0171	
Grenades, Anti-Riot	72054	2	0	1	1		1.2	G	0018	
Grenades, Smoke Pocket	72055	2	0	0	0		1.4	G	0303	
Grenades, Training (Packed)	72162	2	0	0	0		1.4	G	0336	
Guncotton	32069	1	1	1	1		1.1	D	0340	
Gunpowder	10001	1	1	1	1		1.1	D	0028	
Gunpowder	10001	1	1	1	1		1.1	D	0027	
Gunpowder, SFG	20064	1	0	1	1		1.1	D	0000	
Gunpowder, Sulphurless	20063	1	0	1	1		1.1	D	0000	
Gunpowder, Sulphurless Meal	20065	1	0	1	1		1.1	D	0000	
Gurite	31028	1	1	1	1		1.1	D	0081	
Handsmoke	72181	1	0	0	0		1.4	S	0373	
Heads, Rocket Flash 2 inch	72056	2	0	0	0		1.2	G	0171	
Hercules Bullseye Shotgun Propellant Powder	31371	1	1	1	1		1.1	C	0160	
Hercules Shotgun Propellant Powder, Herc, Unique, Green Dot 2400, Blue Dot, Red Dot Reloader 7	31370	1	1	1	1		1.1	C	0160	
Hercules Shotgun Propellant Powders	31370	1	1	1	1		1.1	C	0160	
Hexachlorethane Smoke Candles	72144	2	0	0	0		1.4	G	0197	
Hexagene (Wet)	32046*	1	1	1	1		1.1	D	0072	
Hexolite	32169	1	1	1	1		1.1	D	0118	
High Temperature Cartridge	62009	2	1	1	1		1.1	D	0099	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Hodgdon Powders HP 38, H110, H56, H57, WC680, H414, H450, H335, BLC2, H380, H870	31380	1	1	1	1		1.1	C	0160	
Hodgdon Powders H322, H4198, H4227, H4831, H4895	32228	1	1	1	1		1.1	C	0160	
Housing Assembly 521	62141	2	0	1	1		1.4	S	0323	
Hummer Birdscaring Cartridge	72128	2	0	0	0		1.4	G	0336	
Hydrobel 'S'	31137	1	1	1	1		1.1	D	0081	
Hydropruf	31242	1	1	1	1		1.1	D	0081	
Hydrostar Electric Detonators	63026	2	1	1	1		1.1	B	0030	
Hydrostar Short Delay Detonators	63015	2	1	1	1		1.1	B	0030	
Hygel	31254	1	1	1	1		1.1	D	0081	
IDT 182 Detonator	63047	2	1	1	1		1.4	S	0367	
I.E.B.W	61096	2	1	0	0		1.4	G	0325	
Igniter Assemblies for Rockets (Type 889)	62055A	2	1	1	1		1.3	G	0315	
Igniter Composition for Flare Tracking - Day	71020	1	0	1	1		1.1	G	0000	
Igniter Composition for Flare Tracking - Night	71022	1	0	1	1		1.1	G	0000	
Igniter Cord Connectors	61019	2	0	0	0		1.4	S	0206	
Igniter Electric	62134A	2	1	0	0		1.2	G	0314	
Igniter Electric	62134B	2	1	0	0		1.4	G	0325	
Igniter Safety Fuze Friction	61077	2	0	0	0		1.4	S	0131	
Igniter for Gas Generator Charge	62157A	2	1	0	0		1.3	G	0315	
Igniter for Gas Generator Charge	62157B	2	1	0	0		1.4	G	0325	
Igniter, Ramjet	62046	2	1	0	0		1.3	G	0315	
Igniters Gyro-operating Type S8	62136	2	1	0	0		1.4	G	0325	
Igniters for Grenades	61020	2	1	0	0		1.4	S	0367	
Igniters for Hand-Grenades	63044	2	1	1	1		1.1	B	0029	
Igniters for MDC Cartridges	62047	2	1	0	0		1.4	G	0325	
Igniters for Rocket Motors (1st Definition)	62050A	2	1	1	1		1.1	G	0121	
Igniters for Rocket Motors (1st Definition)	62050B	2	1	1	1		1.3	G	0315	
Igniters for Rocket Motors (3rd Definition)	62149	2	1	1	1		1.1	G	0121	
Igniters for Rocket Motors (4th Definition)	62165	2	1	0	0		1.1	G	0121	
Igniters for Ships Line Throwing Rockets	72163	2	1	0	0		1.4	G	0325	
Igniters for Thermit Welding Portions (1st Definition)	72057	2	1	0	0		1.3	G	0315	
Igniters for Thermit Welding Portions (2nd Definition)	72159	2	1	0	0		1.3	G	0315	
Igniters, Gunpowder (1st Def)	62052	2	1	1	1		1.1	G	0121	
Igniters, Gunpowder (2st Def)	62053	2	1	1	1		1.1	G	0121	
Igniters, Gunpowder (3rd Def)	62054	2	1	0	0		1.1	G	0121	
Igniters, Gunpowder, Electric	62055B	2	1	0	0		1.1	G	0121	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Igniticap Electric Detonator	63042	2	1	1	1		1.1	B	0030	
Igniticap Electric Detonator with H Attachment	63043	2	1	1	1		1.1	B	0030	
Ignition Charges, RM No 1	62058	2	1	1	1		1.1	G	0121	
Improved Ballistite	31255	1	1	1	1		1.1	C	0160	
IMT 172 Actuator	61017	2	1	?	?		1.4	S	0173	
Incendiary Shells	72058A	2	0	0	0		1.2	G	0009	
Incendiary Shells	72058B	2	0	0	0		1.3	G	0010	
Incendiary Stars	72059A	2	0	0	0		1.2	G	0009	
Incendiary Stars	72059B	2	0	0	0		1.3	G	0010	
Indicators A/S Training No 1	72060	2	0	0	0		1.3	G	0093	
Inhibited CDB Propellant Charges	62144	2	0	1	1		1.3	C	0272	
Initiating Trains for Explosive Digging Aids	62116	2	1	1	1		1.1	B	0225	
Instantaneous Fuze	62059A	2	1	1	1		1.3	G	0101	
Instantaneous Fuze	62059B	2	1	1	1		1.4	G	0066	
Iregel	20054	1	1	1	1		1.1	D	0241	
Iregel Special	20046	1	1	1	1		1.1	D	0241	
Iregel Special 1, 2 and 3	20091	1	1	1	1		1.1	D	0241	
Iregex	20061	1	1	1	1		1.1	D	0241	
Iremite	20056	1	1	1	1		1.1	D	0241	
Jetex Igniter Wick	62125	2	1	0	0		1.4	G	0066	
Joke Bomb Fuze	72147	2	0	0	0		1.4	G	0336	
Joke Cigarettes	72061	2	0	0	0		1.4	G	0336	
Kit, Maroon 3, Burst No 2	72188	2	0	0	0		1.2	G	0334	
Kynoch Fog Signal Caps	61021	2	0	0	0		1.4	S	0193	
Kynoch Percussion Cap No 81	61025	2	0	0	0		1.4	S	0044	
Kynoch Percussion Cap No 91	61011	2	0	0	0		1.4	S	0044	
Kynoch Percussion Cap No 182	61069	2	0	0	0		1.4	S	0044	
LF Ammon Gelatine	31058	1	1	1	1		1.1	D	0081	
LF Ammon Gelatine, 90 % strength	31152	1	1	1	1		1.1	D	0081	
LF Ammonia Dynamite, 40% strength	31151	1	1	1	1		1.1	D	0081	
LG Gelatine	31162	1	1	1	1		1.1	D	0081	
Lachrymatory Generators	72129	2	0	1	1		1.4	G	0301	
Lachrymatory Generators (Naval)	72132	2	0	1	1		1.4	G	0301	
Lachrymatory Generators No 1	72130	2	0	1	1		1.4	G	0301	
Lachrymatory Generators No 2	72131	2	0	1	1		1.4	G	0301	
Landing Flares	72062	2	0	0	0		1.3	G	0093	
Low Noise 80 Cartridge	72175	2	0	0	0		1.4	G	0312	
Lead Azide (Wet)	52004	1	1	1	1		1.1	A	0129	
Lead Di-nitro-resorcinate (Wet)	52005	1	0	1	1		1.1	A	0000	
Lead Tri-nitro-resorcinate (Styphnate) (Wet)	52006	1	1	1	1		1.1	A	0130	
Leafields Explosive Bolt	63106	2	0	1	1		1.4	S	0323	
Life-Boat Parachute Signal Rockets (1st Definition)	72063	2	0	0	0		1.2	G	0334	
Life-Boat Parachute Signal (2nd Definition)	72085	2	0	0	0		1.2	G	0334	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
1	2	3	label 4	Con 5	Rec 6	7	8	9	10	11
Lifesmoke M3	72182	2	0	0	0		1.4	S	0337	
Lighting Composition	71015	1	0	1	1		1.3	G	9999	
Lightning Paper	72064	2	0	0	0		1.3	G	0335	
Line Throwing Rocket 41mm	72176	2	0	0	0		1.4	G	0336	
Linear (or Line) Cutting Charge (LCC)	62131	2	1	1	1		1.1	D	0059	
Low Energy Detonating Cord	62063	2	1	1	1		1.1	D	0290	
Lump-Kol Pellet Powder	20004	1	0	1	1		1.1	D	0000	
MOC Cartridge Cases (Empty) Fuzed or Capped	61032	2	0	0	0		1.4	S	0055	
MOC Cartridges (Type 10)	62067	2	0	0	0		1.3	C	0275	
MOC Cartridges (Type 1)	61033	2	0	0	0		1.4	S	0323	
MOC Cartridges (Type 2)	62066	2	0	0	0		1.3	C	0275	
MOC Cartridges (Type 3)	63054	2	0	0	0		1.3	C	0275	
MOC Cartridges (Type 4) 1st Def	61034	2	0	0	0		1.4	S	0323	
MOC Cartridges (Type 4) 2nd Def	61035	2	0	0	0		1.4	S	0323	
MOC Cartridges (Type 9)	61038	2	0	0	0		1.4	S	0323	
MOC Cartridges - Imp	62133	2	0	0	0		1.3	C	0275	
MX Powder	31169	1	1	1	1		1.1	C	0160	
Magna Primer	62155	2	1	1	1		1.1	D	0048	
Magnadet Detonator	63050	2	1	1	1		1.1	B	0030	
Magnesium Torches	72005	2	0	0	0		1.4	G	0336	
Manufactured Fireworks	72001A	2	0	0	0		1.1	G	0333	
Manufactured Fireworks	72001B	2	0	0	0		1.2	G	0334	
Manufactured Fireworks	72001C	2	0	0	0		1.3	G	0335	
Manufactured Fireworks	72001D	2	0	0	0		1.4	G	0336	
Marine Seismex 'A'	20020	1	1	1	1		1.1	D	0082	
Marine Seismex 'W'	32172	1	1	1	1		1.1	D	0082	
Marine Seismex 'WHE'	32187	1	1	1	1		1.1	D	0082	
Marine Sound Signal Mk 3 and Mk 4	63086	2	0	1	1		1.1	G	0196	
Marinex	20019	1	1	1	1		1.1	D	0082	
Maroon 3 Burst No 1	72107	2	0	0	0		1.2	G	0313	
Martignoni Shotshell Primers M58	61063	2	0	0	0		1.4	S	0044	
Maxigel	20040	1	1	1	1		1.1	D	0241	
Mayon Dynamite	31287	1	1	1	1		1.1	D	0081	
Mayon Gelignite	31288	1	1	1	1		1.1	D	0081	
Mayon Tempruf	32200	1	1	1	1		1.1	D	0082	
Mechanite	31084A	1	1	1	1		1.1	C	0160	
Mechanite	31084B	1	1	1	1		1.3	C	0161	
Metabel	32071	1	1	1	1		1.1	D	0084	
Methylamine Nitrate	20074	1	0	1	1		1.1	D	0000	
Military Ammonal	32007	1	1	1	1		1.1	D	0082	
Military Delay Detonators	63052	2	0	1	1		1.1	B	0073	
Military Detonators	63053	2	0	1	1		1.1	B	0073	
Miners' Portfires	62064	2	1	0	0		1.4	G	0325	
Miners' Squibs	62065	2	1	0	0		1.4	G	0325	
Minespex	31163	1	1	1	1		1.1	D	0081	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Minex	31347	1	1	1	1		1.1	D	0081	
Miniature Detonating Cord	62106	2	1	1	1		1.1	D	0065	
Modified Lead Azide (Wet)	52013	1	1	1	1		1.1	A	0129	
Monobel No 1	31166	1	1	1	1		1.1	D	0081	
Monobel X	31167	1	1	1	1		1.1	D	0081	
Morcol	31168	1	1	1	1		1.1	D	0081	
Mortar Parachute Signals	72066	2	0	0	0		1.2	G	0334	
NC 200	32219	1	1	1	1		1.1	C	0160	
NC Disc Powder	32166	1	1	1	1		1.1	C	0160	
Nabit	31312	1	1	1	1		1.1	D	0081	
Neobel	31139	1	1	1	1		1.1	C	0160	
Neodisc	32196	1	1	1	1		1.1	C	0160	
Neoflak	32173	1	1	1	1		1.1	C	0160	
Netex	62133	2	1	1	1		1.1	D	0065	
Nitramon WW	32164	1	1	1	1		1.1	D	0082	
Nitrex	20050	1	1	1	1		1.1	D	0082	
Nitrocellulose	32083	1	1	1	1		1.1	D	0340	
Nitrocellulose Cannon Powder	32085	1	1	1	1		1.1	C	0160	
Nitrocellulose Rifle Powder	32086	1	1	1	1		1.1	C	0160	
Nitrocellulose/Nitroglycerine Paste (Alcohol Wet)	31349	1	1	1	1		1.3	C	0159	
Nitrocotton	32084	1	1	1	1		1.1	D	0340	
Nitrofilm	32223	1	1	1	1		1.3	C	0341	
Nitroguanidine	32087	1	1	1	1		1.1	D	0282	
Nitrone SI	32198	1	1	1	1		1.1	D	0082	
Nitrone SI Primer	32199	1	1	1	1		1.1	D	0082	
Nobel's Acurex Powder	32076	1	1	1	1		1.1	C	0160	
Nobel's Cadet Neonite	32092	1	1	1	1		1.1	C	0160	
Nobel's Caseless Charges	63094	2	0	0	0		0.0	0	0000	
Nobel's CK Powder	31241	1	1	1	1		1.1	C	0160	
Nobel's CK Powder No 1	31004	1	1	1	1		1.1	C	0160	
Nobel's CK Powder No 2	31140	1	1	1	1		1.1	C	0160	
Nobel's CK Powder No 3	31266	1	1	1	1		1.1	C	0160	
Nobel's CK Powder No 4	31293	1	1	1	1		1.1	C	0160	
Nobel's Cordite	31042A	1	1	1	1		1.1	C	0160	
Nobel's Cordite	31042B	1	1	1	1		1.3	C	0161	
Nobel's Cordite No 2	31170A	1	1	1	1		1.1	C	0160	
Nobel's Cordite No 2	31170B	1	1	1	1		1.3	C	0161	
Nobel's Delay Composition R885 (Wet)	52007	1	0	1	1		1.1	A	0000	
Nobel's Delay Composition R894	20005	1	0	1	1		0.0	0	0000	
Nobel's Delay Composition R998	32097	1	0	1	1		0.0	0	0000	
Nobel's Delay Composition R1149 (Wet)	52009	1	0	1	1		1.1	0	0000	
Nobel's Delay Composition R1181	32098	0	0	0	0		1.1	A	0000	
Nobel's Delay Element No 1	62074	2	1	0	0		1.4	G	0325	
Nobel's Delay Element No 2	62075	2	1	0	0		1.3	G	0315	

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			Label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Nobel's Explosive No 704	32099	1	1	1	1		1.1	D	0082	
Nobel's Explosive No 704B	32100	1	1	1	1		1.1	D	0082	
Nobel's Explosive No 808	31174	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 847	31175	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 852	32104	1	1	1	1		1.1	D	0084	
Nobel's Explosive No 896	32106	1	1	1	1		1.1	D	0084	
Nobel's Explosive No 901	31176	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 906	31178	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 916	31179	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 937	31180	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 999	20006	1	1	1	1		1.1	D	0082	
Nobel's Explosive No 1177	32176	1	1	1	1		1.1	D	0082	
Nobel's Explosive No 1182	31188	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1243	20007	1	1	1	1		1.1	D	0082	
Nobel's Explosive No 1244	32101	1	1	1	1		1.1	D	0082	
Nobel's Explosive No 1245	32102	1	1	1	1		1.1	D	0082	
Nobel's Explosive No 1257	31190	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1271	20008	1	1	1	1		1.1	D	0082	
Nobel's Explosive No 1279	32111	1	1	1	1		1.1	D	0082	
Nobel's Explosive No 1321	31192	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1353	31318	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1359	20009	1	1	1	1		1.1	D	0082	
Nobel's Explosive No 1382	20010	1	1	1	1		1.1	D	0082	
Nobel's Explosive No 1390	20021	1	1	1	1		1.1	D	0082	
Nobel's Explosive No 1394	31195	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1398	31196	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1416	32158	1	1	1	1		1.1	D	0082	
Nobel's Explosive No 1423	32160	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1424	31290	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1449	31320	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1471	32182	1	1	1	1		1.1	D	0084	
Nobel's Explosive No 1506	32202	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1509	32002	1	1	1	1		1.1	D	0084	
Nobel's Explosive No 1510	32186	1	1	1	1		1.1	D	0084	
Nobel's Explosive No 1514	32212	1	1	1	1		1.1	D	0151	
Nobel's Explosive No 1520	31325	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1522	20029	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1529	31278	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1541	31274	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1546	20035	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1563	31284	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1567	31289	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1579	32201	1	1	1	1		1.1	D	0082	
Nobel's Explosive No 1583	31292	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1585	20055	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1585S	20086	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1593	31314	1	1	1	1		1.1	D	0081	

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			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Nobel's Explosive No 1621	31328	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1625	20068	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1628	31327	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1630	31361	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1631	20057	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1634	31333	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1641	31358	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1647	31359	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1651	31360	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1661	31340	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1662	31341	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1663	31342	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1664	31343	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1665	31344	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1666	31345	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1667	20062	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1673 (T)	20066	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1674 (T)	20067	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1675	31351	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1676	31378	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1678	31356	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1682	20072	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1686	20071	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1691	20077	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1692	20078	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1693	20079	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1694	20080	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1695	20081	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1696	20082	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1697	20083	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1701	20075	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1702	31365	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1703	31369	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1711	20085	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1712	31368	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1715	31373	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1716	20076	1	1	1	1		1.1	D	0241	
Nobel's Explosive No 1721	31375	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1725	31376	1	1	1	1		1.1	D	0081	
Nobel's Explosive No 1777	20022	1	1	1	1		1.1	D	0241	
Nobel's Flash Sound Signal	32174	1	1	1	1		1.1	D	0084	
Nobel's Glasgow Shotgun Powder	31141	1	1	1	1		1.1	C	0160	
Nobel's Hornet Powder	31142	1	1	1	1		1.1	C	0160	
Nobel's Nitro Neonite	31228	1	1	1	1		1.1	C	0160	
Nobel's Nitrocellulose Powder	32095	1	1	1	1		1.1	C	0160	
Nobel's Nitrocellulose Powder No 1	32096	1	1	1	1		1.1	C	0160	
Nobel's Parabellum Powder	31144	1	1	1	1		1.1	C	0160	

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1	2	3	4	5	6	7	8	9	10	11
Nobel's Pistol Powder	31145	1	1	1	1		1.1	C	0160	
Nobel's Primers	62078	2	1	1	1		1.1	D	0060	
Nobel's Revolver Neonite	32078	1	1	1	1		1.1	C	0160	
Nobel's Revolver Powder	31146	1	1	1	1		1.1	C	0160	
Nobel's Rifle Neonite	32093	1	1	1	1		1.1	C	0160	
Nobel's Rifle Powder	32094	1	1	1	1		1.1	C	0160	
Nobel's Rim Neonite	32079	1	1	1	1		1.1	C	0160	
Nobel's Rimfire Powder	31147	1	1	1	1		1.1	C	0160	
Nobel's Safety Electric Fuzes (1st Definition)	61041	2	0	0	0		1.4	S	0206	
Nobel's Safety Electric Fuzes (2st Definition)	61042	2	0	0	0		1.4	S	0206	
Nobel's Seismic Booster	62072	2	1	1	1		1.1	D	0060	
Nobel's Shaped Charge	62073	2	1	1	1		1.1	D	0059	
Nobel's Shotgun Powder	31148	1	1	1	1		1.1	C	0160	
Nobel's Sound Signal	32175	1	1	1	1		1.1	D	0082	
Nobel's Superim Powder	31171	1	1	1	1		1.1	C	0160	
Nobelite	20011	1	1	1	1		1.1	D	0082	
Nobelite (H)	20012	1	1	1	1		1.1	D	0082	
Nobelite (R)	20034	1	1	1	1		1.1	D	0082	
Nobelite Primer	31059	1	1	1	1		1.1	D	0081	
Nonel Tubing	61107	1	1	1	1		1.4	S	0349	
Norma Handgun Powder No 1010	31261	1	1	1	1		1.1	C	0160	
Norma Handgun Powder No 1020	32190	1	1	1	1		1.1	C	0160	
Norma Large Pistol Primers	61073	2	0	0	0		1.4	S	0044	
Norma Large Rifle Primers	61074	2	0	0	0		1.4	S	0044	
Norma Pistol Powders P1, P2, P3	32116	1	1	1	1		1.1	C	0160	
Norma Revolver Powders R1, R2, R3	32115	1	1	1	1		1.1	C	0160	
Norma Rifle Powders 200 201, 203 and 204	31197A	1	1	1	1		1.1	C	0160	
Norma Rifle Powders 200 201, 203 and 204	31197B	1	1	1	1		1.3	C	0161	
Norma Shotgun Powder	31262	1	1	1	1		1.1	C	0160	
Norma Shotgun Powder S70	32117	1	1	1	1		1.1	C	0160	
Norma Small Pistol Primers	61075	2	0	0	0		1.4	S	0044	
Norma Small Rifle Primers	61076	2	0	0	0		1.4	S	0044	
Norres Safety Electric Fuzes	61044	2	0	0	0		1.4	S	0206	
OE No 2238	20093	1	1	1	1		1.1	D	0241	
OE No 6324	31353	1	1	1	1		1.1	D	0081	
Oaklex	31250	1	1	1	1		1.1	D	0081	
Oakley Explosive No 250B	31348	1	1	1	1		1.1	D	0081	
Oakley Explosive No 260	31202	1	1	1	1		1.1	D	0081	
Oakley Explosive No 263C	31203	1	1	1	1		1.1	D	0081	
Oakley Explosive No 561	31210	1	1	1	1		1.1	D	0081	
Oakley Explosive No 563	31204	1	1	1	1		1.1	D	0081	
Oakley Explosive No 564	31205	1	1	1	1		1.1	D	0081	
Oakley Explosive No 6265	31350	1	1	1	1		1.1	D	0081	

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1	2	3	label 4	Con 5	Rec 6	7	8	9	10	11
Oakley Explosive No 6270	31362	1	1	1	1		1.1	D	0081	
Oakley Explosive No 6284	31363	1	1	1	1		1.1	D	0081	
Oakley Explosive No 6339	31364	1	1	1	1		1.1	D	0081	
Oakley Explosive No 6391	31374	1	1	1	1		1.1	D	0081	
Oakley Explosive No 6410	31377	1	1	1	1		1.1	D	0081	
Oakley Explosive Composition No 900	31372	1	1	1	1		1.1	D	0081	
Oakley Shaped Charge	62163	2	1	1	1		1.1	D	0059	
Olin red 12 gauge Meteor flare	72172	2	0	0	0		1.3	G	0054	
Opencast Gelignite	31060	1	1	1	1		1.1	D	0081	
Opencast Gelignite Assemblies	62114	2	1	1	1		1.1	D	0048	
Opencast Gelignite Q	31061	1	1	1	1		1.1	D	0081	
Oven Blowers	72121	2	0	0	0		1.1	G	0333	
P.E	32118	1	1	1	1		1.1	D	0084	
P.E No 2	32119	1	1	1	1		1.1	D	0084	
P.E No 3	32120	1	1	1	1		1.1	D	0084	
P.E No 4	32189	1	1	1	1		1.1	D	0084	
PETN Boosters	62132	2	1	1	1		1.1	D	0060	
Palfume Azobenzene Generator	72068	2	0	0	0		1.1	G	0333	
Palfume DDT Generator	72069	2	0	0	0		1.1	G	0333	
Parachute Cable Cutter (Autoflug)	63099	2	1	1	1		1.4	B	0255	
Parachute Cartridges	72070	2	0	0	0		1.4	G	0312	
Parafog Insecticidal Smoke Generator	72071	2	0	0	0		1.1	G	0333	
Parasmoke	72186	2	0	0	0		1.4	S	0337	
Penobel One	31330	1	1	1	1		1.1	D	0081	
Penobel Two	31339	1	1	1	1		1.1	D	0081	
Penta-erythritol-tetranitrate (PETN) (Wet)	32121	1	1	1	1		1.1	D	0150	
Pentaflex	62080	2	1	1	1		1.1	D	0065	
Pentaflex 12	62167	2	1	1	1		1.1	D	0065	
Pentaflex G	62158	2	1	1	1		1.1	D	0065	
Pentolite	32122	1	1	1	1		1.1	D	0151	
Pentolite Primer	62141	2	1	1	1		1.1	D	0048	
Pentomex Primers	62138	2	1	1	1		1.1	D	0048	
Percussion Caps O in C No 1	61045	2	0	0	0		1.4	S	0044	
Percussion Detonators for Boosters	63059	2	1	1	1		1.1	B	0029	
Percussion Primers	63060	2	0	0	0		1.4	G	0320	
Percussion Primers Gevelot for 30 mm ammunition	61092	2	0	0	0		1.4	G	0320	
Percussion Primers ZSD 263	63088	2	1	0	0		1.1	G	0121	
Percussion Primers ZSD 269 for 20 mm ammunition	61091	2	0	0	0		1.4	G	0320	
Percussion Primers with Anvils for Small Arms	63081	2	1	0	0		1.1	G	0121	
Perforator Shells	61087	2	0	0	0		1.4	S	0323	
Petards	72072	2	0	0	0		1.4	G	0336	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Photographic Flashes (1st Def)	72073	2	0	0	0		1.1	G	0094	
Photographic Flashes (2nd Def)	72074	2	0	0	0		1.1	G	0094	
Picric Acid	32123	1	0	1	1		1.1	D	0154	
Picrite	32125	1	1	1	1		1.1	D	0282	
Pipe Coupling Unit	61100	2	0	0	0		1.4	S	0323	
Pipe Cutting Charge	62143	2	1	1	1		1.1	D	0059	
Pitex	31279	1	1	1	1		1.1	D	0081	
Plaster Gelatine	31130	1	1	1	1		1.1	D	0081	
Plaster Gelatine Assemblies	62136	2	1	1	1		1.1	D	0048	
Plastic 808	31099	1	1	1	1		1.1	D	0081	
Plastic Core Composition	32126	1	0	1	1		1.3	G	0000	
Plastic Core fuze for fireworks	62118	2	1	1	1		1.4	G	0066	
Plastic Core Safety Fuze	61046	2	1	1	1		1.4	S	0105	
Plastic Propellant	20025	1	0	1	1		1.1	C	0273	
Plastic Igniter Cord	62082	2	1	1	1		1.4	G	0066	
Plastic Igniter Wick	62119	2	1	1	1		1.4	G	0066	
Plastic initiator for smoke Generators	72124	2	1	0	0		1.4	G	0066	
Pocket Distress Signal Cartridges	72075	2	0	0	0		1.4	G	0312	
Polar Ajax 'CS'	31024	1	1	1	1		1.1	D	0081	
Polar Ajax 'S'	31023	1	1	1	1		1.1	D	0081	
Polar Ammon Gelatine Dynamite	31153	1	1	1	1		1.1	D	0081	
Polar Ammon Gelignite	31063	1	1	1	1		1.1	D	0081	
Polar Blasting Gelatine	31157	1	1	1	1		1.1	D	0081	
Polar Blasting Gelatine Type 2, 82 per cent NG	31319	1	1	1	1		1.1	D	0081	
Polar Rockite	31007	1	1	1	1		1.1	D	0081	
Polar Samsonite	31185	1	1	1	1		1.1	D	0081	
Polar Viking	31217	1	1	1	1		1.1	D	0081	
Polygel	31243	1	1	1	1		1.1	D	0081	
Polyvex	31300	1	1	1	1		1.1	D	0081	
Potassium Dinitrophenate	32127	1	0	1	1		1.3	C	0077	
Potassium Perchlorate Propellant	20032	1	0	1	1		1.1	C	0273	
Powerprime	62146	2	1	1	1		1.1	D	0048	
Power-fil	20031	1	1	1	1		1.1	D	0241	
Powerlode	20060	1	1	1	1		1.1	D	0241	
Premium Gelignite	31275	1	1	1	1		1.1	D	0081	
Premium Supergel	20041	1	1	1	1		1.1	D	0241	
Premium Supergex	20070	1	1	1	1		1.1	D	0241	
Primaflex	62147	2	1	1	1		1.1	D	0065	
Primed Cambric	72125	2	0	0	0		1.3	G	0101	
Primer Igniter Needle	61083	2	0	0	0		1.4	S	0206	
Primered Tubes	61097	2	0	0	0		1.4	S	0055	
Propellant AP/PR	20026	1	0	1	1		1.3	C	0274	
Propellant GGI	20030	1	0	1	1		1.3	C	0274	
Propellant NC30	32217	1	1	1	1		1.1	C	0160	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
			Label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Propellant TRHA	32209	1	1	1	1		1.1	D	0226	
Propellant TRHD	32210	1	1	1	1		1.1	D	0226	
Prospex No 5	31231	1	1	1	1		1.1	D	0081	
Prospex Nos 1,2,3,4	31218	1	1	1	1		1.1	D	0081	
Prospex-Semigel	31235	1	1	1	1		1.1	D	0081	
Proximity Fuze L36 T	62159	2	1	1	1		1.4	B	0257	
Puffer Capsules, RM No 1	62090	2	1	0	0		1.3	G	0315	
Puffs, Smoke Brown, for 28 lb Retarded Practice Bomb	72135	2	0	0	0		1.4	G	0197	
Punch Type 1667	63095	2	0	0	0		1.4	G	0276	
Pyrodex Powders CTG, RS & P	20092	1	0	1	1		1.1	D	0000	
Pyrotechnic Delays	62103	2	1	0	0		1.2	G	0314	
QF Ammunition	63061A	2	0	0	0		1.1	F	0005	
QF Ammunition	63061B	2	0	0	0		1.2	F	0007	
Quarrex	31076	1	1	1	1		1.1	D	0081	
Quarrex (NI)	31309	1	1	1	1		1.1	D	0081	
Quarrex A	31077	1	1	1	1		1.1	D	0081	
Quarrex A (NI)	31308	1	1	1	1		1.1	D	0081	
Quarry Dynamite	31008	1	1	1	1		1.1	D	0081	
Quarry Monobel	31220	1	1	1	1		1.1	D	0081	
Quarry Plastex	31100	1	1	1	1		1.1	D	0081	
Quickmatch	72126	2	1	0	0		1.3	G	0101	
RD Composition 202	20013	1	0	1	1		1.1	D	0000	
RD 1031	32128	1	1	1	1		1.1	D	0084	
RD 1308 (Lead Di-nitro-resorcinate)	52010	1	0	1	1		1.1	A	0000	
RD 1354 (Basic Lead Azotetrazole)	52011	1	0	1	1		1.1	A	0000	
RDX (Wet)	32046*	1	1	1	1		1.1	D	0072	
RDX-BWX	32129	1	1	1	1		1.1	D	0072	
RDX-TNT	32130	1	1	1	1		1.1	D	0118	
Railway Fog Signals, 0 in C, No 1	61047	2	0	0	0		1.4	S	0193	
Rapid Vent Valve	63105	2	0	1	1		1.4	G	0323	
Reconnaissance Flares	72077	2	0	0	0		1.3	G	0093	
Regulation Distress Rocket 16 oz	72078	2	0	0	0		1.2	G	0334	
Relay Detonators	63062	2	1	1	1		1.1	B	0029	
Remington Smokeless Powder	32131	1	1	1	1		1.1	C	0160	
Retaining Strap Cutter	62164	2	1	1	1		1.1	D	0059	
Rocket 38 mm	72180	2	0	0	0		1.4	G	0336	
Rifle Signal Grenades	72079	2	0	0	0		1.2	G	0171	
Rocket Motor Charges	72080	2	0	1	1		1.1	C	0271	
Rocket Motors	62145	2	0	1	1		1.3	C	0186	
Rockets HE (Type 889) (Fuzed)	63063	2	0	1	1		1.1	F	0180	
Rockets HE (Type 889) (Unfuzed)	62093	2	0	1	1		1.1	E	0181	
Rockets Practice (Type 889)	62094	2	0	1	1		1.3	C	0183	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
S5 Propellant Powder	31038	1	1	1	1		1.1	C	0160	
SM and A Cartridges	63070	2	0	1	1		1.3	C	0242	
SMDC Harpoon	62160	2	0	0	0		1.4	S	9999	
SNIA Powder GM3 and GM3 Special	32220	1	1	1	1		1.1	C	0160	
SNIA Powders GM Fine 1 and GM Fine 2	32226	1	1	1	1		1.1	C	0160	
SNPE 'T' Powder	32218	1	1	1	1		1.1	C	0160	
SRC2	20014	1	0	1	1		1.1	D	9999	
Safety Cartridge Cases (Empty), Capped	61049	2	0	0	0		1.4	S	0055	
Safety Cartridge Cases (Empty), Primed	61050	2	0	0	0		1.4	S	0055	
Safety Cartridges (Section 108)	61048	2	0	0	0		1.4	S	0012	
Safety Electric Fuzes	61051	2	0	0	0		1.4	S	0206	
Safety Firing Tubes, No 1	61052	2	0	0	0		1.4	S	0206	
Safety Fuze	61053	2	1	1	1		1.4	S	0105	
Safety Instantaneous Fuze	61054	2	1	1	1		1.4	S	0105	
Sample Taker Cartridge	61036	2	0	0	0		1.4	S	0323	
Scat	61099	2	0	0	0		1.4	S	0055	
Schermer Cattle Killer Cartridges	61055	2	0	0	0		1.4	S	0012	
Seamespex	31078	1	1	1	1		1.1	D	0081	
Seamex	31352	1	1	1	1		1.1	D	0081	
Seamex A	31366	1	1	1	1		1.1	D	0081	
Seismex	32177	1	1	1	1		1.1	D	0082	
Seismex "S"	20088	1	1	1	1		1.1	D	0241	
Seismex HE	32216	1	1	1	1		1.1	D	0082	
Seismex P	32224	1	1	1	1		1.1	D	0082	
Seismex Primer	32013	1	1	1	1		1.1	D	0082	
Seismic Electric Detonators	63025	2	1	1	1		1.1	B	0030	
Seismic Gelatine	31064	1	1	1	1		1.1	D	0081	
Shaped Charges	62096	2	1	1	1		1.1	D	0059	
Shearex	31301	1	1	1	1		1.1	D	0081	
Shearex A	31302	1	1	1	1		1.1	D	0081	
Sheet Explosive SX2	32155	1	1	1	1		1.1	D	0072	
Ship's Line Throwing Rockets	72081	2	0	0	0		1.2	G	0238	
Ship's Parachute Signal Rockets (1st Definition)	72082	2	0	0	0		1.2	G	0334	
Ship's Parachute Signal Rockets (2nd Definition)	72083	2	0	0	0		1.2	G	0334	
Shop Goods (Order in Council No 16a) not separately defined	72002	2	0	0	0		1.4	G	0336	
Short Delay Detonators (1st Def)	63064	2	1	1	1		1.1	B	0030	
Short Delay Detonators (2nd Def)	63016	2	1	1	1		1.1	B	0030	
Shotgun Cartridge Illuminating	72113	2	0	0	0		1.4	G	0312	
Shotgun Tracer Pellets	72157	2	0	0	0		1.3	G	0212	

Name	HSE No	Form	Security			Packaging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Sigma 505	20087	1	1	1	1		1.1	D	0241	
Sigma & Delta 3	20042	1	1	1	1		1.1	D	0241	
Sigma No 1, Sigma No 2, Sigma No 3 and Sigma special	20073	1	1	1	1		1.1	D	0241	
Signal Cartridge 19mm Feistal	72178	2	0	0	0		1.3	G	0054	
Signal Cartridge 28 mm Handheld	72170	2	0	0	0		1.4	G	0191	
Signal Grenades (Naval)	72084A	2	0	0	0		1.2	G	0171	
Signal Grenades (Naval)	72084B	2	0	0	0		1.4	G	0297	
Signal Pen Cartridges 16.4 mm	72166	2	0	0	0		1.3	G	0054	
Signals Distress, Day and Night	72086	2	0	0	0		1.4	G	0191	
Simfire Flash Cartridge	72174	2	0	0	0		1.4	S	0405	
Sismarine	32161	1	1	1	1		1.1	D	0082	
Sismarine A	32162	1	1	1	1		1.1	D	0082	
Sismarine B	32159	1	1	1	1		1.1	D	0082	
Sismarine D	32181	1	1	1	1		1.1	D	0082	
Slide Inflation Cartridges	61093	2	0	1	1		1.4	S	0323	
Slow Burning Primers	63069	2	0	0	0		1.4	G	0320	
Slurrex	20052	1	1	1	1		1.1	D	0241	
Small Calibre Incendiary Bullets	72117	2	0	0	0		1.4	G	0306	
Small Calibre Tracer Bullets	72118	2	0	0	0		1.4	G	0306	
Smoke Bombs	72133	2	0	0	0		1.4	G	0303	
Smoke Float Igniters	72134	2	1	0	0		1.4	G	0325	
Smoke Floats No 2	72120A	2	0	0	0		1.2	G	0015	
Smoke Floats No 2	72120B	2	0	0	0		1.4	G	0303	
Smoke Generator (2nd Definiton)	72185	2	0	0	0		1.4	S	0337	
Smoke Generators	72155	2	0	0	0		1.4	G	0197	
Smoke Generators, Kemugen 800 and Kemugen 400	72179	2	0	0	0		1.4	G	0197	
Smoke Generators SU 2690	72151	2	0	0	0		1.4	G	0197	
Smoke Grenades	72137	2	0	0	0		1.4	G	0303	
Smoke Signals	72136	2	0	0	0		1.4	G	0197	
Snaps for Bon-Bon Crackers	72089	2	0	0	0		1.4	G	0336	
Snout, Switched Capped	61102	2	0	0	0		1.4	S	0131	
Socket Distress Signals	72091	2	0	0	0		1.1	G	0196	
Socket Light Signals	72092	2	0	0	0		1.1	G	0196	
Socket Sound Signals	72094	2	0	0	0		1.1	G	0196	
Socket Sound and Smoke Signals	72093	2	0	0	0		1.1	G	0196	
Sodium Dinitrophenate	32171	1	0	1	1		1.3	C	0077	
Sodium Picrate	32139	1	0	1	1		1.3	C	0203	
Sokol Smokeless Gunpowder	32225	1	1	1	1		1.1	C	0160	
Sound Signal Rockets	72097	2	0	0	0		1.1	G	0180	
Special Gelatine	31065	1	1	1	1		1.1	D	0081	
Special Gelignite, 62 per cent	31018	1	1	1	1		1.1	D	0081	
Special Geophex	31269	1	1	1	1		1.1	D	0081	
Special Safety Fuze	61058	2	1	1	1		1.4	S	0105	
Sperry Links	62152	2	0	0	0		1.4	C	9999	
Sporting Ballistite	31138	1	1	1	1		1.1	C	0160	
Squibs Electric	61079	2	0	0	0		1.4	S	0206	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Standard Initiator-Harpoon	62162	2	0	0	0		1.4	S	9999	
Star Shells	72098	2	0	0	0		1.2	G	0171	
Stonex	20015	1	1	1	1		1.1	D	0082	
Stooks	62098	2	1	1	1		1.1	D	0048	
Striker Pin Fuzes	61059	2	0	0	0		1.4	S	0206	
Subaq	31285	1	1	1	1		1.1	D	0081	
Subgel	31291	1	1	1	1		1.1	D	0081	
Submarine Blasting Gelatine	31321	1	1	1	1		1.1	D	0081	
Submarine Signal Decoy	63065	2	0	1	1		1.2	C	0381	
Superdopex	31267	1	1	1	1		1.1	D	0081	
Superflex	62150	2	1	1	1		1.1	D	0065	
Supergel	20038	1	1	1	1		1.1	D	0241	
Supergex	20069	1	1	1	1		1.1	D	0241	
Swiftrain Powder	20016	1	1	1	1		1.3	G	0000	
Switch, Time-Pencil	63076	2	0	1	1		1.4	C	0276	
Tarp	61098	2	0	0	0		1.4	S	0055	
Tetra-nitro-methyl-aniline ("Tetryl")	72179	2	0	0	0		1.4	G	0197	
Tetrazene (Wet)	52012	1	1	1	1		1.1	A	0114	
Thameite A/G	20017	1	1	1	1		1.1	D	0082	
Theatrical Jets	72101	2	1	0	0		1.4	G	0325	
Thermite Igniters	72099	2	1	0	0		1.4	G	0325	
Thermite Igniting Cord	72095	2	1	1	1		1.4	G	0325	
Throwdowns	72090	2	0	0	0		1.4	G	0336	
Thunderflash (2nd Definition)	72171	2	0	0	0		1.4	G	0336	
Thunderflash Rockets 16 oz	72100	2	0	0	0		1.1	G	0333	
Thunderflash, Packed	72167	2	0	0	0		1.4	G	0336	
Togel	31245	1	1	1	1		1.1	D	0081	
Tolamite	31105	1	1	1	1		1.1	D	0081	
Tonite	32197	1	1	1	1		1.1	D	0082	
Torpex No 2	32208	1	1	1	1		1.1	D	0084	
Toy Balloons	72102	2	0	0	0		1.4	G	0336	
Toy Pistol Caps (1st Def)	72096	2	0	0	0		1.4	G	0336	
Toy Pistol Caps (2nd Def)	72140	2	0	0	0		1.4	G	0336	
Toy Pistol Caps (3rd Def)	72141	2	0	0	0		1.4	G	0336	
Toy Pistol Caps (4th Def)	72149	2	0	0	0		1.4	G	0336	
Toy Pistol Caps (5th Def)	72160	2	0	0	0		1.4	G	0336	
Toy Pistol Caps (6th Def)	72169	2	0	0	0		1.4	G	0336	
Tracer Bullets	72105	2	0	0	0		1.4	G	0306	
Tracer Cups	72158	2	0	0	0		1.3	G	0212	
Tracer Pellets	71014	1	0	1	1		1.3	G	0000	
Tracer and Igniter Shell No 10	72104	2	1	0	0		1.1	G	0121	
Tri-nitro-resorcinol (Styphnic acid)	32149	1	0	1	1		1.1	D	0219	
Tri-nitro-toluene (TNT)	32150	1	1	1	1		1.1	D	0209	
Trimobel	31337	1	1	1	1		1.1	D	0081	
Trimobel 4	31338	1	1	1	1		1.1	D	0081	

Name	HSE No	Form	Security			Pack-aging	H C Code		UN No	Misc
			label	Con	Rec					
1	2	3	4	5	6	7	8	9	10	11
Trimonite	32167	1	1	1	1		1.1	D	0084	
Trinalite	32156	1	1	1	1		1.1	D	0082	
Trip Fuzes	61060	2	0	0	0		1.4	S	0206	
Tube Cutter	62126	2	1	1	1		1.1	D	0099	
Tubes Electric for Firing Explosives	62099	2	0	0	0		1.4	G	0320	
Tubes for Firing Explosives	63077	2	0	0	0		1.4	G	0320	
Tunnel Gelatine	31048	1	1	1	1		1.1	D	0081	
Tunnelite	31104	1	1	1	1		1.1	D	0081	
Turbo-starter primers, electrically fired, 15 grain	61062	2	0	0	0		1.4	S	0206	
Ultraspex	31229	1	1	1	1		1.1	D	0081	
Unigel	31184	1	1	1	1		1.1	D	0081	
Unigex A	31186	1	1	1	1		1.1	D	0081	
Unipruf	31150	1	1	1	1		1.1	D	0081	
Unisax	31187	1	1	1	1		1.1	D	0081	
Unisax G	31222	1	1	1	1		1.1	D	0081	
Velomax Primers	62122	2	1	1	1		1.1	D	0048	
Very Signal Cartridges	72106	2	0	0	0		1.4	G	0312	
Vibronite B	32073	1	1	1	1		1.1	D	0082	
Vihtavuori Smokeless Powders, N36, N110, N120, N140, N310, N320, N330, N335, N340	32206	1	1	1	1		1.1	C	0160	
Viscorim	31036A	1	1	1	1		1.1	C	0160	
Viscorim	31036B	1	1	1	1		1.3	C	0161	
Warheads for Rockets, HE (Type 889) (Unfuzed)	62101	2	0	1	1		1.1	D	0286	
Warheads for Rockets, HE (Type 889) (Fuzed)	63080	2	0	1	1		1.1	D	0286	
Weapon Flash SU (2758)	72150	2	0	0	0		1.4	G	0336	
Wild-Fowler Distress Cartridge	72115	2	0	0	0		1.4	G	0312	
Wincoal	31268	1	1	1	1		1.1	D	0081	
Wincoal A	31276	1	1	1	1		1.1	D	0081	
Wincoal X	31324	1	1	1	1		1.1	D	0081	
Wind Direction Smoke Bombs	72138	2	0	0	0		1.3	G	0016	
Wing Tip Flares	72156	2	0	0	0		1.3	G	0093	
Winrox	31234	1	1	1	1		1.1	D	0081	
Xactex	31334	1	1	1	1		1.1	D	0081	
Zero Lag Electric Detonators	63079	2	1	1	1		1.1	B	0030	